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ASSISTANT PHYSICIAN TO ST. GEORGE'S HOSPITAL AND TO THE VICTORIA HOSPITAL FOR CHILDREN.

## LECTURE I.

*Delivered on April 3rd.*

### INTRODUCTION.

MR. PRESIDENT AND GENTLEMEN,—The true basis on which the knowledge of medicine rests is exact observation. Of all the processes of nature those which are concerned with the maintenance of life are the most illusive to the observer. Problems are presented which make great demands upon the resources of mechanical, physical, and chemical science. The inquiry into the source of the energy of the living body and into the forms in which its energy is manifested has occupied some of the greatest researchers of the last century, and not until recent times have chemical and physical methods been applied to the more difficult task of the measurement of these forces. More than commensurate with the difficulty, however, of the subject has been the brilliancy of the results obtained. The principle of the conservation of energy has been applied to living structures. The various forms of living activity have been not only correlated to their source, the potential energy of the food, but measured. Rübner, Laulanie, and a host of untiring workers have been able to show that in animals there is an absolute balance between the energy taken in as food and that used by the body and given out as heat and the chemical energy in the excreta. In order completely to estimate these metabolic processes as a whole it is necessary, not only to analyse the food and the liquid and the solid excreta, but also to ascertain the amount of oxygen taken in and carbon dioxide and water given out by the lungs. This has been done in man in a limited number of cases. On the other hand, a very large number of metabolism experiments has been carried out in which, although the respiratory analyses are wanting, the food and excreta have been daily examined over long periods, both in health and disease. In this way a mass of facts has accumulated concerning nutrition which cannot fail to be of paramount importance to medicine and the principles upon which diets are constructed have been put upon a sure foundation.

Our present object is to examine the results of metabolism experiments with reference to their bearing upon the treatment of disease. In many cases we shall find nothing that is new. The medical observation of the past and the experiment of the bedside have often suspected the truth and acted upon the suspicion with good results and thus a line of practice has come into use which the exact observation of scientific method has later confirmed. But those who have laboriously carried out accurate experiments have put medical knowledge upon firmer ground by transferring some statements from the list of what we think to the list of what we know. We speak of the science and art of medicine. Such researches confer a great benefit upon the science by relieving it of some of the oscillations of opinion and practice which only too frequently obscure the art. It is probable that I shall say nothing that is not known to my audience. My endeavour is rather to fulfil the design of the distinguished founder and to show some points in which practice is supported by "observation and experiment on man himself" and some perhaps in which it is not.

Since the object of these lectures is specifically to "encourage the application of physiological knowledge to the prevention and cure of disease and the prolongation of life" I shall devote the first lecture to the considerations of the principles upon which our knowledge of the nutrition of the body depends and their general application, and the second to the application of these principles in special investigations upon some pathological conditions. I shall be constantly referring to matter which is daily familiar to every medical man but from the point of view of the experimental evidence only.

### PRELIMINARY CONSIDERATIONS.

The food supplies the necessary elements for the structure of the body and also energy for the various bodily activities. The elements are mainly supplied by proteids and salts. The energy is conveyed in different chemical substances, proteid, carbohydrate, and fat. The heat produced when these foods are oxidised in the body is the same as that given off when they are burnt outside the body, and can be ascertained for each foodstuff by combustion in a special calorimeter. The average figures from one gramme of the food substance used in the body have been found to be: for proteid, 4·1 calories; carbohydrates, 4·1; and fat, 9·3. In a metabolism experiment the proteid, carbohydrate, and fat in the fæces must be subtracted from those in the food, the difference being the quantity absorbed from the intestine. The carbohydrate and fat absorbed are wholly oxidised; not so, however, the proteid, for its nitrogen is excreted as urea and other substances which are not fully oxidised and therefore still possess some chemical energy. So that in estimating the total energy supplied by the food to the body we must also subtract this value from that of the absorbed food. The energy value of the urine is most accurately determined by direct estimation of the dry residua in a bomb calorimeter; it can be calculated approximately, however, if the amount of nitrogen in the urine and fæces be known. The oxygen taken in and the carbon dioxide given out by the lungs should also be measured, and since the respiratory quotient thus obtained varies according as to which foodstuff is being oxidised from it we may gain information on this point.

### THE CONSERVATION OF ENERGY.

The proof of the law of the conservation of energy has been supplied in the case of man himself by Atwater and his fellow-workers. A chamber was constructed in which a man could remain for days at a time. The walls were fourfold and the spaces containing air were kept at the same temperature as the chamber by means of a thermo-electric apparatus. Thus no heat was lost to or from the chamber through the walls. Tubes led warm dry air to the chamber and the products of respiration were conducted away through a meter which measured the air and automatically took a sample for analysis at regular intervals. The heat produced by the individual was taken up by a kind of inverted radiator in the chamber, through which water flowed continually. The difference between the temperature of this water on leaving the chamber and that on entering it and the volume flowing through being known, the heat given off could be calculated. The evaporated water in the air leaving the chamber was also estimated and the heat lost from the body in converting this from the liquid to the gaseous state could then be also calculated. The food was measured and analysed and its caloric value determined and the urine and fæces were treated in the same way. These experiments were more complete than the previous ones on animals referred to in that the subject could do muscular work in the chamber. The muscular work of the body is of two kinds, internal and external. The internal is that done by the circulatory, respiratory, and visceral muscle. The energy thus set free is like that produced by the activity of the living cells of the body other than muscular, discharged as heat from the body. The external is that which results from external work such as raising a weight. In treatment we can control the external completely; the internal partially. In these experiments the subject worked a stationary bicycle and the bicycle was connected with a dynamo and the electrical current generated carried through a glow-lamp in the chamber and thus converted into heat and measured together with that given off from the body. The amount of work done and converted into heat was also separately measured by registering the electrical current produced. The potential energy of the substances actually oxidised in the body was thus compared with the kinetic energy produced, either as heat when the body was at rest or as heat and external muscular work, which was measured as heat. The experiments, which were 45, lasted several days, usually four, the total number of days observed being 143. The results were a complete confirmation in man of the above mentioned

work in animals, both when the subject was at rest or doing work.

We know therefore, not by inference but by direct experiment, that in health the body produces no form of physical energy which is not derived from, and cannot be directly traced to, the chemical energy of the food or its own substance. Although the same complete prolonged experiment has not been done in disease, yet the results of a number of metabolism experiments, including calorimetric observations, furnish us with evidence, if such be wanted, that the same is true in disease. With this foundation to work upon, the carrying out of observations upon nutrition in man becomes a much more simple matter. Such detailed experiments as the above detailed one of Atwater required an extremely costly apparatus and the services of about 12 skilled workers. But since the relation of the food energy to that evolved from the living organism is now definitely known we can calculate from the food consumed the energy which the body uses without making a calorimetric experiment. An ordinary metabolic experiment with a nitrogen balance-sheet will tell us whether nitrogenous food be laid on as proteid tissue and not burnt at once. Also, if respiratory analyses be made in a respiratory chamber, such as is constructed in a number of laboratories, the determination of the respiratory quotient will enable us to conclude whether in the case of tissue other than proteid being used up it be carbohydrate or fat.

In order to form clear ideas as to the management of disordered states of nutrition we must consider for a moment the uses to which the different foodstuffs are put in the body.

### PROTEIDS.

Proteid food contains those elements of which the essential tissues and organs of the body are made, since these consist of protoplasm. It is therefore an essential foodstuff. The manifold activities of living protoplasm are only equalled by the bewildering complexities of the molecular groups composing it, now being daily unravelled by many workers. These groups are separated from each other by digestion and such as are needed for the reconstruction of tissue are built up again into protoplasm, while any excess taken is converted into urea and excreted within a few hours. The work done by the digestive organs in dealing with proteid is, as we shall see, considerable. We have to ask ourselves the question, Can we, in diseased conditions of the digestive system, or in those diseases, such as fevers, where the stomach certainly, and the whole alimentary canal probably, share in a general depression of function, carry out with advantage part of this work beforehand. To answer this we must know first whether the hydrolytic products of digestion of proteid can replace proteid in the diet and supply the needs of the body for nitrogenous tissue; and secondly, whether if this be so, there are any disadvantages attached to their use. The reply to the first question is an affirmative. Albumoses, peptones, and even the groups of fractions obtained by prolonged pancreatic digestion, amido-bodies and their congeners, no longer proteid in nature, have been shown to be capable of keeping the animal body in nitrogenous equilibrium. The albumoses form the major part of some prepared foods, such as somatose. Metabolic experiments show, however, that these substances are far from being desirable, from a dietetic point of view, either in health or disease. True, they are normal products of digestion, but an examination of the intestinal contents shows that under normal conditions they are only present at any one time in minimal quantities. Each step in the disintegration is rapidly succeeded by the next, or by the removal of the product formed through absorption. But when albumoses are given in bulk in the food a considerable quantity is present at one time and irritative qualities are shown to be possessed which cause increased secretion, diarrhœa, and lessened absorption. For instance, Hildebrandt[1] in a man showed by analyses of the fæces that 87 per cent. of proteid given (which contained 23 grammes of nitrogen per day) was absorbed. On replacing about a quarter of this proteid with somatose the absorption sank to 73 per cent. On replacing two-thirds with somatose only 67 per cent. was absorbed. Still less favourable figures have been obtained by Neumann, Salkowski, Bornstein, and Ellinger. Small quantities added to the diets are better used, though by no means so well as ordinary proteid. These substances are, therefore, less acceptable to the alimentary canal than the original proteid. The same is true of sugar as compared with starch, the natural form in which carbohydrate is taken. We may seriously question whether peptonised milk has any advantages as a nutriment. The mixed products of digestion introduced into the stomach call forth gastric juice and ordinary milk calls forth less than any other food. Since the milk is digested normally there seems to be no need to substitute for it a partially digested fluid which will increase the gastric activity unnecessarily without any corresponding benefit to nutrition and with the possible disadvantages mentioned above. Peptonised milk does not clot in the stomach like ordinary milk but the formation of a hard clot can be prevented by dilution or by adding 20 cubic centimetres of 25 per cent. sodium citrate to each litre, or to some degree by thickening it. We must also remember that if albumoses or peptone be present in any considerable quantity their bitter taste becomes noticeable.

### FATE OF PROTEID.

When any quantity of proteid has been digested there is an early excretion of urea—i.e., within 24 hours an amount of nitrogen corresponding to that ingested appears in the urine, except in such cases as are laying on flesh. Half of this urea excretion may occur within seven hours.[2] This fact suggests that the proteid taken in has not been built up into body tissue and thus the view has forced itself upon observers and has especially has been urged by Folin, that this rapidly excreted nitrogen is not needed by the body for structural purposes and hence the proteid containing it is hydrolysed and the nitrogen is excreted. The rapidity with which the elimination of nitrogen takes place is explained when we consider the probability that proteids are absorbed not as peptone but as amido-bodies and such simpler derivatives, the hydrolysis referred to above taking place chiefly in the intestine, and that such a proportion of these absorbed substances as is not needed to build up tissue is not reconverted into proteid at all but turned at once, as regards its nitrogenous moiety, into urea and excreted in the urine. The fate of the non-nitrogenous carbon-containing moiety is not definite, but it is no doubt oxidised to furnish energy in the same way as carbohydrate and fat. The hydrolysis of proteid involved in splitting off its nitrogen may take place with very little loss of energy, leaving all the carbonaceous part containing most of the energy of the original proteid available to be set free by oxidation. The suggestion naturally follows that this excess proteid may be replaced by carbohydrate of fat which, while serving equally well for the production of heat and energy by oxidation, would not throw upon the excretory organs the work of eliminating so much nitrogenous material. Experiment bears this out. Hirschfeld, Landergren, Swen, Kumawaga, and others have shown that nitrogen equilibrium can be maintained at a low level of proteid ingestion—e.g., even at 15 grammes of proteid per day for a time if abundance of carbohydrate and fat be taken. More convincing, however, are the observations of Chittenden on different classes of men, scientific workers, soldiers, and athletes, over long periods. These observations proved that about 50 grammes of proteid per day, or half the amount usually recommended, sufficed to keep these individuals in nitrogenous equilibrium and in health, without any increase, indeed with even a diminution in the total caloric value of the food taken. Other observers have fixed from 0·5 to 0·6 gramme of proteid per kilogramme per day as the lower limit advisable, which in a man of 70 kilogrammes is from 35 to 42 grammes. On the one hand, then, the theoretical reasoning from the fact that an excess of nitrogen is so rapidly eliminated from the body and on the other the practical result of experiment, substantially agree that proteid in greater amount is not necessary in health to supply the needs of the body, and increases the work of nitrogenous excretion with no apparent advantage.

Chittenden's results must remind everyone of acquaintances whose consumption of proteid is exceedingly small. They also suggest that many workers in the poorer classes are not so underfed as regards alcohol as they are supposed to be, but that rather are the richer classes overfed. Caspari and Glaessner investigated the metabolism of a married couple who lived upon a vegetable diet. The daily consumption of proteid was represented by from 5·3 to 7·8 grammes

[1] Zeitschrift für Physiologische Chemie, Band xviii., S. 180, 1893; see Ergebnisse der Physiologie, F. Volt, 1903, p. 693.

[2] Panum, see Speck, one hour in dog, healthy.

of nitrogen. On this was not only nitrogenous equilibrium attained but some laid on. The absorption of proteid was only from 74 to 76 per cent., but that of the other foodstuffs was above normal, for of the total energy of the food from 90 to 92 per cent. was utilised, these figures being as good as those for an ordinary diet. (Atwater: Available, i.e., absorbed, food was: energy, 90 to 93 per cent.; proteid, 89 to 93 per cent.; fat, 95 to 96 per cent.; and carbohydrate, 97 to 98 per cent.)

Schryver and Hamill have recently brought before the Physiological Society evidence that the physiologists working in a London laboratory utilised on the average 9·6 grammes of nitrogen a day. Hence large quantities are obviously unnecessary for most individuals. Are they desirable from any point of view? We must remember that we are dealing with average figures and people of large bulk will require more and it is important to remember this when fixing standards which are to apply to a number of people. Again, none of the physiologists above referred to, though living active lives, were doing continuous muscular work. It is true that Chittenden's subjects were some of them athletes and some soldiers, but they lost weight, and none were doing active continuous muscular work[3] such as thousands of workmen perform for from eight to 12 hours a day. Although, as we shall see in a few minutes, the energy for muscular work is not supplied from proteid when other foods are available, yet the wear and tear of muscular tissues is supplied from proteid and, we should expect that a fairly liberal supply of it would be an advantage to hard workers. It is to be noted that in Atwater's experiments the subjects were excreting in the urine and therefore metabolising on an average from 15 to 18 grammes of nitrogen in the rest experiments[4] with a diet worth about 2700 calories and were practically in nitrogenous equilibrium. In the work experiments there was a daily loss of nitrogen in the urine in 19 experiments out of 23 with a similar amount of proteid in the food and a caloric intake averaging 4340 calories. This does not prove that they could not have adjusted themselves to a lower standard, but they were evidently not perfectly adjusted to the higher one when doing hard work. It is stated that coolies work continuously through the day on a diet which contains from nine to ten grammes of nitrogen, of which from eight to nine grammes would be absorbed from the bowel. This being so, it is necessary to ascertain whether they do as much work as a European would in the time and also how their body bulk compares with that of our workmen. Kumawaga used 2478 calories, of which 6·3 per cent. was proteid and 93·7 carbohydrate—i.e., 50 grammes proteid, of which 38 were used (hard work) = six grammes of nitrogen. With prolonged exercise the caloric value of the diet must be sufficient. We shall see that in some of Atwater's observations as much as 1000 calories of heat were recorded as given off from the body in two hours of working a bicycle hard against resistance. It is possible that more than the minimum requirement of proteid is a benefit to a race, but this only long-continued careful observation can decide. The fiercest animals are carnivorous and take an excess of proteid according to our standard, but this is perhaps because courage as well as cunning is necessary to enable them to obtain their food. There are certainly herbivorous animals, such as the horse, which in sagacity, endurance, and strength are not inferior to the carnivora. This question is not one of vegetarianism, for it is possible to take an excess of nitrogen on a vegetable diet, and this is often done.

Whether the optimum amount of proteid in a diet be as low as some of the above results may claim there is no doubt that a great many people eat a great deal too much of this form of food and the above results strengthen the hands of the medical man in his crusade against an excessive nitrogenous diet. We have before us definite proof that 50 grammes or two ounces of proteid—i.e., 250 grammes or nine ounces of meat—is a sufficient proportion for an ordinary diet in health and in conditions such as chronic granular kidney, arterio-sclerosis, and gout may keep this figure before us as the total quantity to be allowed in the various foodstuffs. In diseases involving the kidneys and digestive organs we can therefore limit the proteid to this amount with the full assurance that we are not in any way handicapping the nutrition of the body, but, on the contrary, lessening the demands upon the digestive and secretory organs.

[3] See Phys. Econ. in Nutrition, p. 135.
[4] Vide averages on p. 554.

Reference may be made to Hopkins's suggestion that proteid food is not only required to form proteid tissue, but also to furnish certain molecular groupings necessary for the formation of some substances in the body, such as adrenalin and pigments, which exist in small quantities but are of great importance.

### FAT AND CARBOHYDRATE.

Fat and carbohydrate are used to supply energy for all the bodily activities, whether manifested as heat or movement. Fat is weight for weight much the more valuable, but both are necessary; of the two carbohydrate is the more necessary (Kumawaga). The total caloric value of the diet must be made up to from 35 to 40 calories per kilogramme—i.e., about 2000 to 3000 calories for an adult who is doing moderate work. Chittenden's men used less but all lost weight, and this part of their work was not so well supported by evidence of other workers as is the reduction of proteid.

### REST IN BED.

We may now consider the food requirements of those who are not working. The effect of resting in bed was shown clearly by Atwater's experiments; he found that the energy given off by his subject during sleeping hours was nearly half that used when he was up and about in the chamber without doing any serious work; the figures show that the demand is 80 per cent. more in the latter case. This exact measurement is a striking example of the difference between stopping entirely in bed and being up, leaving external muscular work out of the question. In such diseases as anæmia, heart disease, respiratory disease affecting the circulation, fever or any disease endangering nutrition, and in which the demands made upon the body are not balanced by its resources, it is clear that complete rest in bed is nearly 80 per cent. better than being kept in one room and not in bed. I say nearly 80 per cent. because the subject was not at this time taking food. Patients kept in bed, of course, require food and we shall see that digestion increases the oxidation processes in the body and we shall also see, however, that the work done in digestion varies considerably with the kind of food given and may be kept low. Internal work is done in the body by the circulatory and respiratory muscles, by the striated muscles in preserving their tone, and by the muscles involving the maintenance of the upright position. Zuntz calculated that the respiratory and circulatory work is about from 10 to 20 per cent. of the total calories of the fasting body. Johannsen found that by controlling his involuntary muscular activity he could reduce his excretion of carbon dioxide by nearly a third. Speck has shown how quite inappreciable movements greatly increase the oxidation processes. Light increases the metabolism, doubtless through causing muscular movement. How great the total internal work is may be seen by the fact that in animals when the cervical cord is cut or curare is given the oxygen used and the carbon dioxide given off are reduced by one-half. In treatment we can considerably reduce these demands upon the individual by complete rest in the recumbent position. When digestive activity is absent, as in fasting with complete rest, the energy used by the body is at its lowest and we can trace the influence exerted by food.

### EFFECT OF FOOD.

Atwater's figures show that in a resting experiment the carbon dioxide excretion was greater on the feeding days by 24 per cent. (33·8 : 27·3). The effect of an individual meal is also very noticeable when the oxygen as well as the carbon dioxide is measured. Both the intake of oxygen and the output of carbon dioxide show a rise of oxidation after taking food. There is much evidence that this is largely due to the muscular and secretory activity of the alimentary canal. The same increase of oxidation takes place in colic, as shown by Lehmann and Zuntz in the fasting man Cetti. It also occurs after a saline purgative has been administered. It is, however, probably not entirely due to the alimentary canal activity but also to an increase in the general metabolic activity of the body.[5] Nevertheless, such observations may yield useful information as to the degree of oxidation called forth by different foods which, with the above reservation, we may look upon as indicative of digestive work. It is often desirable in disease to feed the patient upon a food which will yield a maximum of energy to the body with a minimum of expenditure in its elaboration. The work of Speck in 1874[6] and of Magnus-

[5] Pembrey and S.: Journal of Physiology, vol. xxxi., p. 333, 19
[6] Ergebnisse der Physiologie.

Levy (1893) has shown that more demands are made upon the digestive activity with a proteid diet than with any other and also that this increase of internal muscular and secretory work lasts a longer time than with carbohydrate and fat. (May this represent the rapid breakdown of unneeded nitrogen and the conversion of the non-nitrogenous moiety into carbohydrate for future use?) A meal of proteid produces a rise in the respiratory exchange of from 30 to 50 per cent. above that of the fasting animal.[7] Speck and Magnus-Levy found that in man the oxidation after taking meat is 30 per cent. higher than after taking sugar and butter and the increase lasts about four hours. It is also increased with the amount of meat taken. This oxidation begins before there is time for any appreciable amount of absorption to have taken place; it is not caused by injecting food substances into the blood directly (although the excretion of carbon dioxide is increased under this condition) and, as above mentioned, it may be imitated by increasing the activity of the intestine by means of purgatives. Here, again, we have unequivocal evidence in favour of limiting the proteid in the food as far as may be without prejudice to nutrition in diseased states, and especially in alimentary diseases, since it requires more digestive work than other foodstuffs. We can therefore lessen the internal work of the body by (1) rest in bed and avoidance of all excitement and (2) limiting the digestive work caused by allowing too much proteid.

### EXERCISE: EXTERNAL WORK.

Exercise involving the performance of external muscular work increases the metabolism of the body very greatly, but not that of the proteid tissues, unless it be excessive, when there is a slight addition of excretion of nitrogen in the urine for a day or two after. Atwater's figures showed that a man during the night gave out 150 calories in two hours, in the same time doing moderate work 500 calories, and when a muscular man was working hard 1000 calories were used in two hours. The actual external work done is about a fifth of the energy discharged or even less. This is rather better than the yield of a steam engine, which gives about 15 per cent. of its total discharge of energy as work and the rest as heat. It is often necessary to prescribe exercise of a moderate nature and it is obvious that a more liberal diet is required, just as in health when muscular work is done. In some diseases, as, for instance, in those of the kidneys, we must know what kind of food must be added. Experiment shows plainly that it is not necessary to add proteid, for when other material is available the body tissues are not used up to furnish muscular energy. During rest one of Atwater's subjects gave out 436 calories; of this 40 were derived from proteid and 396 from fat or carbohydrate, probably from fat. When the same individual did muscular work the discharge of energy rose to 772 calories in the same time. That from proteid, however, only increased from 40 to 60, while 712 were derived from fat. Again, one day 543 calories were discharged as external work; this necessitated an increase in the production of energy of over 2000 calories. Nevertheless, the heat given off from proteid oxidised, as shown by the nitrogen balance, was substantially the same as on a rest day, being 434 calories as against 429. Hence the whole of the 2000 calories was supplied by the oxidation of non-nitrogenous substances.

Of course, if carbohydrate or fat is not available for the production of the energy required in muscular work proteid is used, but the proof that there is any advantage in using proteid is wanting, while we know that extra work devolves upon the alimentary canal and the kidneys in dealing with the excess of nitrogen and it is probable that the proteid first makes the carbohydrate required from its carbonaceous residue. If, then, a man taking exercise does not require a corresponding increase in his nitrogenous food carbohydrate or fat should be freely given. Metabolism experiments here give definite proof that either of these foodstuffs is available. Carbohydrate may have a slight advantage over fat but there is no practical difference. Fat furnishes more energy per gramme given and when we desire to keep the bulk of the food as low as possible it is convenient to use it in abundance, for one gramme of fat is equivalent to more than two of carbohydrate. Again, when carbohydrate is not utilised in the body or only partially utilised, as in diabetes, we are forced to rely mainly upon fat and proteid as energy furnishers. We shall consider in detail the forms in which fat can be given when considering the treatment of diseases of the stomach. Carbohydrate food is almost invariably well digested by the stomach when given in simple form, such as arrowroot. Even in the case of dilated stomach when fermentative changes are especially liable to occur, if lavage be carried out, this food is well borne and has, like fat, the advantage over proteid in gastric ulcer of not stimulating the secretion of gastric juice.

[7] Pembrey: Rec. Adv.

### FASTING.

A large number of diseased persons are suffering from partial inanition. There are also cases in which abstinence from food is adopted as a therapeutic means, notably in gastric ulcer. A consideration of the processes of nutrition during fasting will be of help in dealing with such conditions. In the first place we may, I think, start with the premiss that it is *a priori* desirable to feed the patient, except in specially selected cases of those diseases in which the taking of food seriously favours the progress of the morbid condition. Fasting has been advocated as a universal system of dietetics, especially in acute illnesses.[8] But we know that fasting animals are more liable to contract acute infections to which they are exposed and less liable to resist the infectious process when contracted and must conclude that the same applies to man. And this is certainly confirmed by experience. When an individual is obliged to go without food for a longer or shorter time, the point of greatest importance is the quantity of storage material contained in the body, and especially of fat. The body uses as little of its actual—i.e., proteid—tissue as possible. For instance, von Noorden calculated that a man on the second day of fasting oxidised proteid and fat to the value of 1897 calories. Of this, only 10 per cent. came from proteid and the remaining 90 per cent. from fat. Cetti, who was not a fat man, used on the second day of a fast 1595 calories, of which 18 per cent. came from proteid and 82 per cent. from fat. Further, as the fasting days proceed the body uses less energy and the proteid excretion, which is usually about from nine to ten grammes per day, may sink as low as from three to four grammes of nitrogen per day after three weeks. The amount of energy used per kilogramme does not fall much, but as the body loses in weight the total energy used falls regularly. After a certain time the proteid tissues are called upon to supply all the energy needed, for the fat becomes used up or else the body loses the power of oxidising it, for some fat usually remains in the body even after death from starvation. In this case the nitrogen in the urine represents (1) the unavoidable tissue breakdown, probably equivalent to from three to four grammes of nitrogen; (2) the proteid used in producing energy which is increased after the fat is gone; and (3) the proteid broken down to form carbohydrate.

Towards the end of a hunger period, acetone, diacetic acid, and oxybutyric acid appear in quantity in the urine. It is noteworthy that acetone has been regarded as arising from fat, but that it appears in greatest quantity when that substance is present in least amount and when most of the energy is being furnished from the proteid. This, together with the fact that it may arise when abundance of fat is available, suggests rather that a deficiency of carbohydrate is the accompaniment of the formation of this substance. The suggestion of Embden and von Noorden that acetone may arise as a disintegration product of leucin, the remainder of the molecule containing the lactic acid group being synthesised to form carbohydrate, would also accord with this view. We should then suppose that proteid forms the carbohydrate and that acetone is a by-product and the appearance of this substance with diacetic acid in the urine would indicate that carbohydrate is required—e.g., fever and wasting diseases. Then in this one respect nutrition will be placed upon a more normal basis.

Since most of the observations on the metabolism of fasting people have been made when the patients were up we should expect that a fasting period would be much better endured with a subject in bed, for the demands made upon the body are in this case much less as shown above, first because the internal work of the muscular, circulatory, and respiratory system is at a minimum owing to the absence of exertion; secondly, the internal work accompanying digestion is absent; and thirdly, because the oxidation in the muscles necessary to maintain the body temperature is less owing to the body being warmly clothed. This is found to be the case, for fairly nourished women suffering from gastric ulcer have been found to bear easily a fasting period

[8] THE LANCET, Feb. 3rd, 1906, p. 311.

of three weeks or more, fluid being supplied per mouth or per rectum. The secretion of gastric juice ceases and the ulcer is under the most favourable conditions for healing.

In treating such cases with injections of albumin water and sugar we must remember that the patient is very nearly completely fasting. For instance, a patient at present in St. George's Hospital took per day by the rectum 45 ounces of albumin water, each pint of which contains the white of two eggs (26 calories), one teaspoonful of sugar (14 calories), and a teaspoonful of salt. This is given in three doses of 15 ounces each. Each enema is therefore equivalent to about 30 calories and the total energy supplied per day is less than 100 calories, even supposing that the albumin is made use of.

The facts which have been observed upon fasting men and animals show that in such conditions careful attention must be paid to the following points. 1. The weight; the loss must be carefully observed and should not be more than from 1 to 1·5 per cent. of the total per day. As to the total loss, it is said that a man cannot survive a reduction of more than a third in acute hunger. Such a statement is of no clinical value, but any increase in the rate of loss is an indication to supply nourishment. 2. A fall of temperature below the normal limits is of sinister significance. This is a sign which is well known in cases of pathological starvation, such as that of œsophageal stricture. 3. A rise of the temperature above the normal contra-indicates fasting for more than a short time. Fever has been found in animals to lessen considerably the power of resistance to inanition. Nitrogen breakdown is never so little as in fasting without fever. 4. Sufficient fluid must be supplied. The body can only survive the deprivation of water for a short time. Experiments will be quoted later to show the effect of diminishing the water-supply on an ordinary diet. In the condition of which we are treating at present the fluid is usually given in an isotonic solution, such as normal saline, by the rectum. The quantity of urine should be watched and if it fall below the preceding average and become concentrated and the patient feels thirsty more fluid should be administered, if necessary by subcutaneous injection. Less water is necessary than when food is taken.

### PARTIAL INANITION.

With partial feeding the period of resistance is much longer; indeed, in such a condition of subacute starvation the body may survive the loss of a much greater proportion of its weight than in complete hunger. The body has been known to become reduced by nearly half. We may class with this condition the treatment of enteric fever with whey. Taking König's analyses of milk, giving the percentage as follows: casein, 3·02; albumin, 0·53; fats, 3·69; and sugar, 4·88; and the heat values of the substances at 5·86 (casein), 5·74 (albumin), 9·23 (fat), and 3·95 (lactose), in one litre we should get a heat value of 740 calories. This is a high figure. The average for cow's milk obtained by direct estimation is about 670 calories (Langstein) per litre. Taking the higher we see that the constituents of the whey, the albumin and the lactose, give 30·42 and 102·76, equal to 223·18 calories in a litre or 1·76 pints, no allowance being made for the loss by imperfect absorption and in urea. So that two pints of whey a day at most mean a furnishing of 255·1 or about 250 calories per day, a nutritive value of a little more than half a pint of milk (212 calories).

### NUTRIENT ENEMATA.

Turning now to the metabolism of patients receiving nutrient enemata, it is important to remember that we are dealing with a condition of partial starvation; enemata as usually given contain a fuel value of not more than 200 kilocalories in each enema. We must inquire how much food and of what kind is likely to be absorbed and what relation the quantity bears to the actual needs of the body. A fasting man (Cetti) used up tissue to the extent of about 30 calories per kilogramme.[9] During sleep and with as complete rest as possible the figure may be as low as 25 calories per kilogramme.[10] Even if only a portion of this be supplied it is of great value, as we have seen that a man can survive very much longer if a part of his energy be furnished than in hunger. In such conditions as gastric ulcer, when it may not be desirable to supply food by the mouth, this question is of great importance. We want to know what foodstuffs are made use of when introduced into the rectum and in what quantities. Voit and Bauer and Eichhorst showed that the absorption of albumin is aided by salt. A 1 per cent. saline solution is isotonic with the intestinal wall and forms a suitable medium for the conveyance of foods. Leube[11] carried out experiments in which meat and pancreas were mixed and concluded that a considerable quantity could be taken into the body in this way. Food was also given by the mouth, however. Boyd and Robertson[12] do not recommend this enema, however, as they find the putrefaction in the bowel was excessive. Ewald[13] obtained good results as to the absorption of eggs and other substances such as peptone. His observations were made for the most part on a neurotic woman who was also receiving food by the mouth. Brandenburg[14] concluded that only one-third of the casein of milk was absorbed, and other observers have also reported on this point unfavourably to casein. In 1903 Ehrström[15] investigated this point afresh. He points out that O. Cohnheim has shown that casein can be directly broken down by the erepsin of the intestinal juice without previous peptonisation, while other proteids cannot. On the other hand, it is probably more easily acted upon by bacteria. The following enema was administered two or three times a day to a patient with carcinoma of the cardiac orifice: 50 grammes of dextrose, 150 grammes of warm milk, and 15 grammes of proton (a combination of soda with caseinogen). This has a heat value of 350 calories. No abnormal fermentation was observed. An analysis of the fæces showed that 80 per cent. of the nitrogen was absorbed. He believes that the caseinogen was really broken down—that is, digested—in the bowel. If this substance be introduced into the blood directly it appears in the urine, but an investigation of this point by means of a frequent examination of the urine showed that this did not occur. Bial[16] mentions a research by Zehmisch,[17] which I have not read, in which enemata were given consisting of milk, eggs, sugar, and salt. The proteid and fat were very badly absorbed, the figures for absorption being: 1·5 per cent. proteid, 6 per cent. fat, 67 per cent. sugar, and 31 per cent. salt. These results are exceedingly unfavourable except as regards the sugar. Bial made one-day observations upon himself on two occasions with a 10 per cent. solution of Witte's peptone. He found that 50 per cent. was absorbed and if alcohol were added 66 per cent., and recommends the following enema: peptone, lactose, and absolute alcohol, of each 25 grammes; tincture of opium, ten drops; and water up to 250 cubic centimetres; to be given three times daily. The enema contains no fat.

Boyd and Robertson[18] have recently carried out some very useful observations. Six patients were observed for six days each and different enemata were given, six hourly, no food being taken by the mouth, and the urine and fæces were analysed daily. They found that proteid in the form of milk and eggs is very little absorbed from the bowel. From 30 to 70 grammes were given and from four to 14 were absorbed. In two cases when the white of one egg was given just as much was absorbed, nine and 16 grammes, as in four cases with the whites of two eggs in which four, seven, ten, and 11 grammes were absorbed; therefore no definite relation existed between the amount given and that absorbed. The highest caloric value obtained in the day from proteid was 56 calories.

With fat results much more favourable were obtained than by the above-mentioned workers. We have seen that Zehmisch reported an absorption of 6 per cent. only and Munk and Rosenstein in their observations on a patient with a lymphatic fistula reckoned that about the same proportion was taken up when lipanin was introduced into the rectum. Boyd and Robertson found that from 12 to 51 per cent. of fat was retained from milk, the yelk of egg, and in one case from cod liver oil. The absorption was absolutely greater when more fat was given. In four enemas for the one day of two eggs, 47 grammes of dextrose, ten cubic centimetres of cod liver oil, with saline solution, there were 103 grammes of fat, of which 46 were absorbed, having a heat value of 426 calories. In others 24·35 and, as I have already mentioned, 51 per cent. was absorbed. Such a utilisation of fat in these emulsified forms is of great importance and exerted, as might be expected, a distinct proteid-sparing

[9] Hammarsten, p. 557.
[10] Zouden, Tigerstedt, und Johannsen. Hammarsten, p. 58
[11] Deutsches Archiv für Klinische Medicin, 1872, S. 1.
[12] Scottish Medical and Surgical Journal, 1906, vol. xviii., p. 193.
[13] Zeitschrift für Klinische Medicin, 1887, S. 1240.
[14] Archiv für Klinische Medicin, Band lviii., 1896.
[15] Zeitschrift für Klinische Medicin, Band xlix., S. 377, 1903.
[16] Archiv für Verdauungs-krankheiten, 9, 1903.
[17] Inaugural Dissertation, Halle, 10, 1903.
[18] Loc. cit.

action, much less nitrogen being passed in the urine. Hausmann has recently found that of a 15 per cent. solution of grape sugar 60·3 per cent. is absorbed in two hours, of cane sugar 51·5 per cent. at most, and of milk sugar 37·5 per cent. 10 per cent. alcohol delays absorption but its caloric value more than makes up. The sugar absorption is helped by 1 per cent. saline solution.

We see therefore that sugar is well taken up from the rectum. To exclude the possibility of its being simply broken down by bacterial action these observers applied to it an experiment used by Ehrström in the case of caseinogen. Dextrose was digested with fæces in an incubator and it was found that less than 1 per cent. is broken down in four hours. From the enemata 37 to 81 grammes of dextrose were taken up in the day, being from 150 to 330 calories in fuel value. No glycosuria was observed.

It follows from the consideration of the above figures that the feeding was effective. They recommend an enema of the yelks of two eggs, 30 grammes of dextrose (pure), and pancreatised milk to 300 cubic centimetres (ten ounces). In the experiments the caloric value actually taken up varied from 240 to 645 calories in a day. The average was 389. The enema here recommended contains 300 calories. Therefore four in the day contain 1200, and probably about 500 will be absorbed. The authors lay stress on the smallness of this value, and point out that Umber has shown that gastric juice is secreted into the stomach during rectal feeding, and that this would be prejudicial to an ulcer.

I think nevertheless that these results are encouraging to this method of feeding. 500 calories is nearly half the need of a woman of 50 kilogrammes lying in bed. At 25 calories per kilogramme she would require 1250 calories, and it is obviously very much better to supply 500 calories if the patient is in any danger of malnutrition than that she should break down more tissue still to furnish it herself. For instance, if she excreted ten grammes of nitrogen in the urine this means that 62·5 grammes of proteid are broken down, or 330 of actual flesh, and this would furnish 250 calories of the 1250 and the remaining 1000 calories would need the oxidation of 107 grammes of fat—that is, about 150 grammes of fatty tissue. But the 500 calories absorbed from the rectum would save a good proportion of the fat breakdown and although very little proteid is absorbed the other foodstuffs will still spare the tissue proteid, as, indeed, the figures in the above research show. Thus, although we must be perfectly clear that rectal feeding cannot supply the caloric need of the body, even under the most favourable conditions, it is shown to be a means by which we can introduce a valuable amount of food. The prospect of supplying any useful quantity of proteid is regarded by Boyd and Robertson as slight and indeed the quantity taken up was very small. But Ehrström's results with milk and proton and Bial's with peptone are suggestive that more success might be attained with those substances. Since 10 or even 20 per cent. of dextrose is taken up it is clear that it is not necessary under suitable conditions to have a fluid isotonic with the rectum, but the more nearly this is attained the more likely are the enemata to be borne for long periods. Dextrose, unless pure, contains irritating substances. The rectum must always be washed out daily and it is very important that sufficient fluid be given. Experience is showing that enemata of ten or 15 ounces can be retained if slowly given and they have the great advantage of needing less frequent administration. Cannon[19] showed that in the cat an anti-peristalsis of the large intestine is a normal occurrence and is also set up when a nutrient enema is passed into the rectum carrying the material to the cæcum, and may force fluid through the ileo-cæcal valve, but only when sufficient bulk was present. There is much more chance of the contents of an enema reaching the upper part of the large intestine and even the small if a good quantity be given.

### FEEDING AFTER INANITION.

Under normal conditions if the food taken into the body be in excess of that required there is a storage of energy in the form of fat. Although carnivora easily lay on proteid tissue this is not the case with man. In special circumstances, such as the provision of an excessive diet, enormously rich in proteid, given for short periods only, nitrogenous tissue may be laid on.[20] But, generally speaking, this is not so, except when the muscular tissue is growing in bulk under the influence of constant exercise. After a period of fasting, however, the condition is different and proteid is laid on rather than fat, just as during the fast fat is broken down rather than proteid—that is to say, when the body is from any cause below its weight or increasing in weight proteid is laid on. Von Noorden points out that in such circumstances the body will retain proteid from a diet which in the well nourished would lead to a loss of nitrogen. The retention of nitrogen is not a function of the amount of food but of the body cell. We may recall that the same is true of the use of oxygen by the body. The supply of oxygen in the lungs is in almost all cases sufficient, and increasing it does not increase the oxidation processes, since these depend solely upon the needs of the tissues. A girl who had fasted owing to an œsophageal stricture retained a quarter of the nitrogen given.[21] Beibtreu's hysterical woman[22] laid on over four grammes of nitrogen per day for 14 days on a diet containing 30 grammes. The observations of Popov[23] also showed how well nitrogenous tissue can be laid on and nutrition improved. Dr. W. Hale White and myself investigated the metabolism of a woman whose weight had fallen to 39 kilogrammes. She was confined to one room for eight weeks, massaged, and fed on an exceedingly liberal and varied diet. She illustrated well the amount of food which can be taken in such circumstances. Its energy value per day was over 5000 and more than 110 calories per kilogramme. After the first week from 35 to 46 grammes of nitrogen were taken daily and between 200 and 300 grammes of fat. The quantities of fat and proteid were thus approximately equal, the average proteid intake being 244 grammes and the fat intake 252 grammes. Abundant carbohydrate was also supplied in the form of bread, potatoes, other vegetables, puddings, milk, &c. The absorption was astonishingly complete, 96 per cent. of both nitrogen and fat being utilised. There was no diarrhœa, vomiting, or disturbance of digestion. A large amount of the nitrogen was retained and the case showed with what avidity the tissues retain this kind of food in inanition, as has been demonstrated by other workers. The weight increased from 39 to 52 kilogrammes—that is, she added a third of her original weight—in the eight weeks.

After fevers the same is true. Abramovitch in 1883, for instance, in a case of pneumonia after the fever had come to an end observed for four days, found that a man, aged 22 years, weighing 54 kilogrammes, retained 7·2 grammes of nitrogen per day. This is equivalent to 238 grammes, or about half a pound of proteid tissue a day. The diet contained 550 grammes of bread, 150 grammes of meat, and about a litre of soup. This was not excessive in heat value; the bread and meat would come to about 1650 calories. We cannot make a calculation for the soup and bouillon but these would not add very much fuel value. Other observers since have confirmed these results in convalescence after acute illness.

The factors favouring the putting on of weight, including proteid and fat, after inanition from any cause are: (1) feeding at frequent regular intervals; (2) a varied diet; and (3) the removal of all causes of loss of energy—that is to say, all sources of unrest. From observations upon animals it is probable that flesh would be still better deposited if short fasting periods were intervened from time to time.[24] Even on an excessive diet, no fear need be entertained of producing any harmful degree of purin bodies in the organism if food be chosen with this object in view.[25]

[19] American Journal of Physiology.
[20] Luthjeu: Berger, Deutsches Archiv für Klinische Medicin, 1904, Band lxxi., S. 278.
[21] Müller, von Noorden, p. 155.
[22] Pflüger's Archiv, Band xli., 1887.
[23] D. M. B., p. 280.
[24] Pembrey and Spriggs, Journal of Physiology, vol. xxxi., p. 335, 1904.
[25] Spriggs: Guy's Hospital Reports, vol. lvii., 1902.

LEEDS PUBLIC DISPENSARY: THE POST-GRADUATE COURSE.—A post-graduate course will be opened at this dispensary on April 30th next with an address by Mr. Jonathan Hutchinson, F.R.S. The clinical demonstrations will commence on May 8th. Further particulars will be supplied by the honorary secretary.

DAWLISH COTTAGE HOSPITAL.—Dawlish Cottage Hospital, which has recently been enlarged and rendered more efficient, at a cost of £1200, through the generosity of Mrs. Nosworthy, was opened on April 18th in the presence of a large gathering. The ceremony was performed by Mrs. Nosworthy who in the course of a short speech promised to provide a new operating table for the institution at a cost of about £40.

A PAPER ON

# RECENT ADVANCES IN THE SURGERY OF THE BLOOD-VESSELS.

Read before the Section of Surgery at the Fifteenth International Congress of Medicine at Lisbon, April 19th to 26th, 1906,

BY D'ARCY POWER, M.A., M.B. OXON., F.R.C.S. ENG.,
SURGEON TO ST. BARTHOLOMEW'S HOSPITAL.

MANY advances have been made of late years in connexion with the surgery of the blood-vessels and to these advances the English-speaking races have contributed their fair share, though fortunately surgery, like science, knows no nationality and every improvement whether in theory or practice becomes at once the property of all mankind.

Surgical knowledge is based upon pathology and pathology itself is but a part of physiology. Improvements in physiology, therefore, acting through pathology, lead to improvements in the science and art of surgery. Physiologists have devoted much attention to the vascular mechanism and they have been so ably assisted by histologists that we have now a tolerably clear idea of the circulation of the blood and of the means by which it is maintained and regulated.

## SURGICAL SHOCK AND COLLAPSE.

This knowledge at first sight would appear to be more useful to the physician than to the surgeon but the surgeon has employed it to advantage in elucidating the cause and the rational treatment of collapse and shock, conditions which every surgeon has long viewed with the utmost alarm because they so often put an abrupt end to his best planned operations. You all know the sequence of events as they occur in the surgery when a man is brought in from a railway smash, in the operating theatre during the administration of an anæsthetic, and in the wards when a patient is dying with a gangrenous appendix. Such conditions are bad enough in hospital practice; they are worse when they occur in private; worst of all when they have to be faced at home. Need I draw you again the classical picture of a patient in a state of shock?—a picture drawn so well by my old master, Sir William Savory, that I cannot improve upon it:—

> The patient lies in a state of utter prostration. There is a striking pallor of the whole surface, most marked in the face. Even the lips are quite pale and bloodless. There is a cold and clammy moisture upon the skin and often distinct drops of sweat upon the brow and forehead. The countenance has a dull aspect and appears shrunken and contracted. There is a remarkable languor in the whole expression and especially in the eye which has lost its natural lustre and is partially concealed by the drooping of the upper lid, whilst the pupil is dilated and reacts sluggishly. The nostrils, too, are usually dilated. The temperature is reduced so that the patient shivers from time to time and complains of cold. Muscular debility is extreme—apparent at a glance in the condition of the lips and hands—occasionally even in the relaxation of the sphincters. The pulse is generally frequent, sometimes irregular, always very feeble, perhaps quite imperceptible. In this latter case, although the ear may detect the fluttering action of the heart, the pulse does not reach the wrist. The respiratory movements are short and feeble or panting and gasping, "wanting the relief of sighs," sometimes imperceptible, although in the majority of cases some action of the diaphragm may be detected by careful observation. Vertigo with dimness of vision supervenes. As a rule there is not complete insensibility, but the patient is drowsy and bewildered, yet conscious and often rational when roused. Blissfully unconscious of his perilous condition he dreams away his end, or roused by the fruitless activity of his attendants he may ask, "Is this death?" Sometimes the intellect is singularly clear and the senses are perfect, the hearing occasionally even peculiarly acute, whilst in the less extreme cases there are often nausea and vomiting with hiccough.

Starting with such a picture in his mind Crile[1] has carried out an important and elaborate research upon the blood pressure in surgery and has thrown his results into the form of an essay which gained him the Cartwright prize for 1903. The research, he says, was undertaken to study the cause of shock and collapse as it occurs in surgical practice and to obtain, if possible, some rational treatment for a condition which is of no rare occurrence in the practice of every operating surgeon.

The essential phenomenon in shock is a fall of blood pressure caused by exhaustion rather than by structural lesions and the fall is due to the blood accumulating in the veins and especially in the larger venous trunks. In shock, therefore, there is a condition of intravenous hæmorrhage. When the fall of pressure occurs gradually the patient passes into a condition of shock; if it occurs suddenly he is said to be in a state of collapse and a similar condition is produced by actual loss of blood as well as by other causes.

The tradition of different schools varies very greatly in the treatment of the shock and collapse following operations. One surgeon administers alcohol as a routine method after every severe operation, another gives it before as well as after the operation, whilst a third never gives it at all. One orders digitalis, another strychnine, others strychnine and its antagonist nitroglycerine at the same time; whilst others, again, give hypodermic injections of ether even when the patient has been anæsthetised by ether. Atropin is injected hypodermically because the cutaneous circulation is thereby increased and in shock the patient has a cold skin. Others give caffein because it stimulates the heart. Ergotin is a favourite remedy in France, strychnine in Germany. We in England follow the German rather than the French plan and employ strychnine largely. But if the truth must be spoken and we examine the results obtained by those who stimulate their patients habitually and compare them with those obtained by surgeons who only resort to stimulation occasionally, it seems as though the better results were gained by the surgeons who reserve their remedies for really urgent cases. The treatment of surgical shock and collapse therefore is clearly empirical at the present time and Crile has done a useful work in undertaking an investigation upon the blood pressure in surgery with a view to ascertain by experiment the conditions under which it varies, for until these conditions are known there can be no rational treatment.

The questions to be answered in connexion with shock and collapse are the following: To what is the fall of blood pressure due? Is it caused by (*a*) exhaustion of the blood-vessels, i.e., the anatomical periphery; (*b*) exhaustion of the heart; (*c*) of the centres, vaso-motor, cardiac, or respiratory, and if it is due to failure of these centres is it the result of an exhaustion or failure of action on their part or is it caused by the blood plasma passing through the walls of the blood-vessels? (*d*) If it is due to an exhaustion of one or more of these centres or organs would stimulation relieve the exhaustion or would further exhaustion follow the stimulation? In other words, is it better to lash the tired horse or to rest it? If only some of the centres or organs are exhausted would it be advantageous to stimulate those which are not affected while the exhausted ones are allowed to rest? Would it be advantageous to restore the blood pressure in such cases by harmless mechanical means if it were found possible to do so? Are not the centres governing the circulation automatic in their action and are they not all stimulated automatically? Moreover, are they not all stimulated to the point of exhaustion before the final circulatory breakdown known to us as collapse or shock? Is it better to depend upon drug stimulation of these exhausted centres or should reliance be placed upon their automatic stimulation?

Crile submitted these problems to the test of experiment and as far as possible subjected his experimental results to a clinical comparison in his surgical wards. He arrived by these means at results useful to every surgeon, for they deal with the various remedies that we are accustomed to employ in the treatment of the more severe cases of shock and collapse. He has summed up the results of his observations in the following words. In many cases the control of the blood pressure is the control of life itself. Surgical shock is an exhaustion of the vaso-motor centre; neither the heart muscle, nor the cardiac centres, nor the respiratory centre are other than secondarily involved. Collapse is due to a suspension of the function of the cardiac or of the vaso-motor mechanism or to hæmorrhage. In shock therapeutic doses of strychnine are inert; physiological doses are dangerous or fatal. When it does not cause death increased exhaustion follows the administration of strychnine. It is impossible to make any distinction between external stimulation of the vaso-motor centre—such as is produced by injuries and operation—and internal stimulation by such stimulants as strychnine. Each in sufficient amount produces shock and each with equal logic might be used to treat the shock produced by the other. Stimulants of the vaso-motor centres are not contra indicated in shock and collapse. But in shock cardiac stimulants have only a limited range of usefulness, whilst their action may prove to be injurious. Stimulants may be useful in collapse because the centres are not exhausted. Saline infusions are not very useful in shock but they may be very effective in the treatment of collapse. The blood only tolerates a limited dilution with saline solution and

[1] Blood Pressure in Surgery: an Experimental and Clinical Research. By George W. Crile, A.M., M.D., Professor of Clinical Surgery, Western Reserve Medical College, Cleveland. 8vo.

elimination soon begins to take place through the ordinary channels of absorption. The fluid which thus accumulates in the splanchnic area may be sufficient in quantity to lead to fixation of the diaphragm and moveable ribs, causing death by respiratory failure. Saline infusion in shock raises but cannot sustain the blood pressure.

Adrenalin, as has been shown, acts both upon the heart and the blood-vessels. It raises the blood pressure in every degree of shock, even when the medulla is cocainised and when it is absent, as in an animal which has been decapitated. But adrenalin is so quickly oxidised by the body tissues and by the blood that its effects are very temporary. The drug must therefore be given continuously and in excessive doses it stimulates the cardio-inhibitory mechanism, though the stimulation can be set aside experimentally by the injection of atropine.

A pneumatic rubber suit which can be inflated at will provides an artificial peripheral resistance which is capable of controlling the blood pressure within a range of from 25 to 60 millimetres of mercury and is a useful adjuvant to adrenalin in cases of advanced shock. By the continued use of artificial respiration, rhythmic pressure upon the thorax over the region of the heart, and the infusion of adrenalin, animals which had apparently been dead for fifteen minutes were resuscitated. By the same means with the addition of the rubber suit a patient who had been conventionally dead for nine minutes after an injury to his brain was partially resuscitated for 32 minutes and during this time exhibited a strong heart beat and was able to move his head. It is clear from these investigations that we are in a fair way to obtain a rational treatment for shock and collapse based, as all surgical advances should be based, upon a sound substratum of pathological knowledge gained by experiment.

### THE LIGATURE OF ARTERIES IN THEIR CONTINUITY.

Everyone who knows anything of the history of surgery knows that the modern method of stopping bleeding by the ligature of arteries is due to the labours of Ambroise Paré. The ligature of arteries was described by Celsus in A.D. 50 and by Galen in A.D. 130 and these surgeons recommended that the artery should be tied in two places and afterwards divided. Few people are aware of the amount of careful experimental work which has been performed to bring up the surgical technique of ligature to its present standard of excellence, though every surgeon knows the radical change of procedure which has taken place within the last 20 years. Then, a septic ligature passed round an artery was deliberately left with the ends hanging out of the wound that it might ulcerate through the vessel with a serious risk of secondary hæmorrhage; now, a thin ligature of silk or of some animal tissue capable of being absorbed is cut short after it has been tied and is buried in the wound in full confidence that it will become disintegrated, and secondary hæmorrhage is almost unknown.

In England many of the advances in our knowledge are due to the work of Ballance and Edmunds who published their conclusions in 1891.[2] The scientific portion of the work deals with the physiological occlusion and the pathological obliteration of arteries as illustrated by the ductus arteriosus and by the changes taking place in syphilitic arteritis. Consideration is given to the conduct and fate of the corpuscles, of the clot, of the arterial coats and of the ligature after an artery has been tied. The choice of ligature and the kind of knot are then discussed, together with the amount of force which should be exerted in tying the ligature. The most important practical points are those connected with the choice of ligature, the character of the knot, and the force employed. A perfect ligature must be sufficiently strong not to break: inelastic, round, smooth, pliable, and easily tied into a knot. It must not be too bulky; it should be capable of being absorbed, though not too readily. Lastly, a good ligature should be capable of being rendered absolutely sterile. These conditions are only fulfilled by a few materials and the choice of ligature must fall on ox peritoneum, gold-beaters' skin, kangaroo tendon or boiled floss silk; failing these on boiled Chinese twist silk, chromic catgut, or silkworm gut. The reasons for arriving at this conclusion as regards the nature of the ligature may be given in the following terms: "The outer coat and sheath of an artery consist of white fibrous tissue, and the most appropriate ligature, therefore, is prepared from this material—that is to say, from tendon or peritoneal tissue of sufficient strength. These ligatures satisfy all theoretical requirements. They are strong, inelastic, round, smooth, pliable, and are easily obtained of the proper size. They are slowly absorbed and are readily made aseptic. Peritoneum should be better than tendon because it resists absorption for a longer time. Floss silk is a smooth and trustworthy ligature. Ordinary silk and chromicised catgut are good, but their rough surfaces and the presence of mucous and muscular tissue in the catgut are defects, for it makes them more difficult to keep aseptic. Wire is too rigid and too difficult to handle to make it useful as a ligature; silkworm gut is not easy to manipulate round an artery unless it has been soaked for a long time in water and, moreover, several strands must be employed to make a ligature which will not cut the coats. This adds to the difficulty, but when these obstacles are overcome silkworm-gut makes a very beautiful ligature. Ox aorta must be rejected on account of its weakness, bulk, and elasticity." For the practical purposes of everyday life in the operating theatre I prefer silk for the ligature of arteries and I direct that it shall be unwound from the wooden reels on which it is bought, re-wound on glass reels in shorter lengths, and then boiled for at least an hour. I have an abiding distrust of catgut, even when it is most carefully prepared, and I think that when tendon is used the first half-hitch of the reef-knot is likely to slip whilst the second turn is being made.

The knots ordinarily used for tying ligatures are the reef, the granny, and the surgical knot. All are open to the objection I have just mentioned, that the first part of the knot may slip whilst the second part is being completed. There is thus "an uncertainty of occlusion" which applies not only to the tying of arteries but to the ligature of other structures, such as hernial sacs, and the pedicles of tumours. To overcome this difficulty Ballance and Edmunds recommend the use of two ligatures passed round the vessel and tied as a "stay knot." They make out a strong case both on experimental and clinical grounds for the discontinuance of the ordinary practice of rupturing the internal and middle coats of arteries when they are tied in their continuity. They advocate the occlusion of the lumen by bringing the intima into apposition for some distance at the seat of ligature. The great disadvantage attending rupture of the internal and middle coats as it is usually practised in the ligature of an artery in its continuity is that the vessel is seriously weakened. There is consequently a danger of secondary hæmorrhage and this accident has actually happened after ligature of large vessels like the innominate even when there has been no appreciable sepsis.

### ANEURYSMS TREATED BY METHODS OTHER THAN LIGATURE.

Much has been done of late years by physicians to treat aneurysm successfully without having recourse to the surgeon. Bellingham's rest and diet method, advocated by Tufnell, combined with the administration of potassium iodide in ten grain doses every eight hours sometimes makes a new man of a patient with an aneurysm and enables him, at any rate for a time, to perform his duties again. But the relief is too often only temporary and in other cases it never occurs. Such desperate cases drift into the surgical wards of hospitals and it is then our endeavour to do by art what nature has failed to carry out.

*Diagnosis by the Roentgen rays.*—Dr. Hugh Walsham[3] in England and Dr. Guido Holzknecht[4] in Vienna have shown that the diagnosis of deeply seated thoracic and cardiac aneurysms is sometimes greatly assisted by the use of the screen and by radiographs. Dr. Walsham points out that to establish the diagnosis of an intrathoracic aneurysm the shadow must be in continuity with the heart or aorta and that the shadow of an intrathoracic new growth is quite different from that of an aneurysm. The variation in density between the heart shadow and the shadow of an aneurysmal sac is important from the point of view of prognosis. Fluid blood is almost completely transparent to the Roentgen rays, whilst laminated clot is comparatively opaque. The greater the density of the aneurysmal sac in the radiograph the more

[2] A Treatise on the Ligation of the Great Arteries in Continuity, with Observations on the Nature, Progress, and Treatment of Aneurysm, by C. A. Ballance and Walter Edmunds. 8vo London: Macmillan and Co., 1891.

[3] Clinical Journal, vol. xviii., 1901, p. 184, and Edinburgh Medical Journal, 1901, vol. i., p. 354

[4] Archiv und Atlas der Normalen und Pathologischen Anatomie in Typischen Röntgenbildern, Hamburg, 1901.

abundant therefore is the amount of laminated clot which it contains. Dr. Walsham also draws attention to the fact that the heart is often found to lie nearly transversely in the chest when there is an aortic aneurysm, apparently because it has been pressed into this position by the superincumbent weight of the aneurysmal sac.

An improved knowledge of pathology has shown the method by which nature attempts to cure an aneurysm and by following the clue thus given various forms of treatment have been adopted for aneurysms which are surgically inaccessible to the more simple plan of ligature. Foremost amongst these methods are the administration of gelatin or calcium chloride to increase the coagulability of the blood generally; acupuncture, electrolysis, or wiring to promote coagulation locally. These methods have been tried chiefly in cases of intra-abdominal and intra-thoracic aneurysm and hitherto with so limited a degree of success as to show that some can be abandoned as useless, whilst others, with improved technique, may yet prove serviceable in cases which have been properly selected.

*The injection of gelatin.*—The method of injecting gelatin was first recommended by Lancereaux in 1897 who based his recommendation upon experiments made by Dastre and Floresco confirmed by Camus and Gley, that the injection of a solution of gelatin into the veins rendered the blood more coagulable. After reporting a single successful case in 1897 Lancereaux in 1898 brought forward the details of five other cases for three of which he claimed complete success whilst in the remaining two death took place, in one patient from rupture of the aneurysm and in the other from uræmia. He sums up the conclusions at which he has arrived in the following words:—

> Gelatin introduced into the subcutaneous cellular tissue penetrates into the blood which it renders more than normally coagulable, and, since the blood encounters two conditions favourable to coagulation in the sac of the aneurysm, viz.: a slowing of its current and a vascular wall which is often uneven, a more or less abundant clot is formed which in time fills the sac. This clot ultimately shrinks, the pouch in which it is contained diminishes in size and disappears. If the clot softens the blood penetrates between it and the walls of the sac and the tumour is reproduced. Under such conditions fortunately, coagulation again takes place readily. Gelatin, therefore, constitutes an excellent therapeutic agent, which, if it does not cure aneurysms, at any rate favours the general process of cure.

Lancereaux has fixed experimentally the quantity of gelatin necessary to obtain a sufficient coagulability of human blood. It is 250 cubic centimetres of a saline solution containing two grammes per 100 cubic centimetres of gelatin and he has found by experience that several months are required to obtain satisfactory results and that during this period at least 12 or 15 injections are necessary. According to Huchard a 1 per cent. solution of gelatin is safer than a 2 per cent. and it is advisable to leave a clear interval of from eight to ten days between each injection. As a general rule it is not possible to introduce more than 100 cubic centimetres of the gelatin solution into the subcutaneous tissue without causing pain and even this amount should be injected slowly—over an interval of from ten to 12 minutes—in order to avoid discomfort and overdistension of the skin. A considerable swelling is formed at the point of injection but it subsides entirely in from six to 12 hours. The inner aspect of the thigh is found to be the most convenient place for the injection. The method of procedure consists is filling a sterilised glass syringe with 100 cubic centimetres of the gelatin solution made as follows: One ounce of gelatin, 131 grains of sodium chloride, and 50 ounces of sterile distilled water are put into a flask plugged with cotton-wool. The flask is allowed to stand an hour or two for the gelatin to soften and it is then heated in a water-bath until the gelatin is dissolved. The flask is afterwards placed in a steamer for an hour and is subjected to this treatment on three consecutive days.

Immediately before it is used the quantity to be employed (100 cubic centimetres) is again re-steamed. Every precaution is taken to secure complete asepsis not only of the solution but also of the skin of the patient and the instruments employed. The necessity for complete sterilisation of the gelatin is shown by the fact that two patients died from tetanus at Guy's Hospital whilst undergoing this method of treatment and it appears that commercial gelatin often contains tetanus germs. It is satisfactory to find that these germs are killed by boiling for three minutes and that boiling for this length of time does not affect the process of gelatinisation.

Iodide of potassium is given in ten grain doses three times a day concurrently with the gelatin injections and with it Guthrie Rankin[5] combines minim doses of a 1 per cent. solution of nitroglycerine whenever the tension of the pulse becomes excessive or when there are symptoms of angina. The nitrogenous elements of the daily dietary are also reduced to the lowest extent and the amount of liquid allowed is kept within very narrow limits. This method of treating aneurysms by the subcutaneous injection of gelatin is still upon its trial in cases of inaccessible aneurysm. It is by no means uniformly successful and it appears likely to fall into disuse.

*Treatment by the introduction of foreign bodies into the sac.*—When the aneurysm is small and is inaccessible to ligature without being surgically inaccessible and when there is only a small aperture so that the danger of embolism is diminished, attempts have been made to cause coagulation locally in the sac by the introduction of foreign bodies.

*Acupuncture.*—Simple acupuncture without the use of electric currents was adopted at first upon the suggestion of Velpeau in France and of Benjamin Phillips in England. It has been employed by Christopher Heath and Chauncy Puzey. Three pairs of sewing needles are introduced into the sac where each pair are made to cross. They are left in position until the fifth day and are then withdrawn. Although some satisfactory results were obtained by this method it is not likely again to be adopted.

*Wiring.*—In 1864 Murchison and C. Moore[6] of the Middlesex Hospital passed a fine trocar and cannula into a large aneurysm of the ascending aorta which was protruding into the second and third intercostal spaces. 26 yards of fine iron wire were introduced into the sac of the aneurysm through the cannula, the end of the wire being pushed home with a blunt trocar. The operation lasted one hour and no anæsthetic was given. The patient seemed much relieved at first but died from sepsis on the fifth day. The post-mortem examination showed that the sac was full of clot mostly post mortem, but Moore points out that there was firm adhesion between the fibrin inclosing the wire and the wall of the aneurysm, so firm indeed that the adhesion was inseparable without dissection and the mass of wire and fibrin together could only be removed by tearing it apart. Loreta[7] in 1885 was the first to apply this method to an abdominal aneurysm. He performed laparotomy and passed six feet of silvered copper wire into a large aneurysmal sac. The patient left the hospital ten weeks later with the aneurysm reduced to a hard, non-pulsating mass of the size of a walnut. He died three weeks afterwards from rupture of the aorta below the aneurysm. G. L. Hunner[8] collected all the cases of this operation, both thoracic and abdominal, which had been published up to 1900. The list contains 14 cases with three cures and 11 deaths. A necropsy was obtained in nine of the 11 patients who died and in all there was evidence that the presence of the wire had induced firm clotting within the sac. The cases which did best were those in which from five to ten feet of wire were introduced.

Several other aneurysms have been "wired" since this list was published. In one by myself[9] an attempt was made to improve the technique of the operation by the use of an ingenious instrument devised by my house surgeon, Dr. G. H. Colt. The apparatus was designed to introduce a known quantity of silver wire into the sac of an aneurysm with complete asepsis, a maximum of speed and a minimum of disturbance. The instrument "snagged" the wire and caused it to coil within the sac. The simplicity of the operation defeated its own ends for the instrument worked so easily that in two minutes and a half I introduced 80 inches of silver wire into the aneurysm with a clotting surface of 3·7 square inches. The patient survived the operation 50 hours, and at the post-mortem examination a loop of silver

[5] The Treatment of Aneurysm by the Subcutaneous Injection of Gelatin, by Guthrie Rankin, M.D., Transactions of the Royal Medical and Chirurgical Society, vol. lxxxvi., 1903, p. 377.

[6] On a New Method of Procuring the Consolidation of Fibrin in Certain Incurable Aneurysms, by Charles H. Moore and Charles Murchison, M.D., Transactions of the Royal Medical and Chirurgical Society, vol. xlvii., 1864, p. 129.

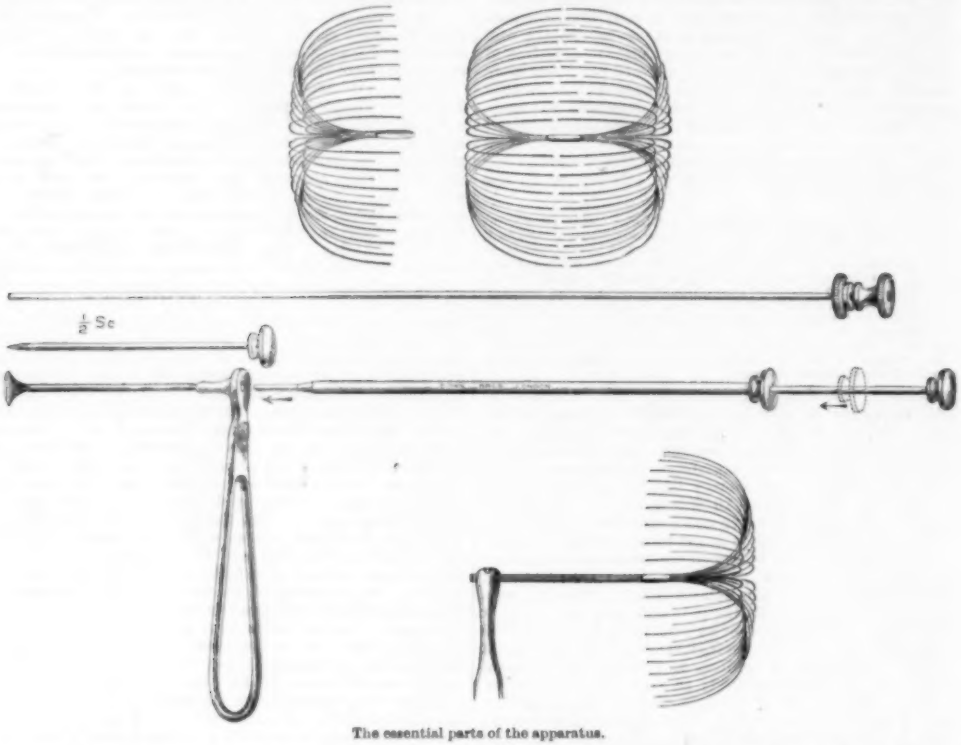
[7] Loreta Memoirs Royal Academy, Bologna, vol. vi., series iv.

[8] Aneurysm of the Aorta treated by the Insertion of a Permanent Wire and Galvanism (Moore-Corradi Method), with a Report of Five Cases. By Guy L. Hunner, M.D., Johns Hopkins Hospital Bulletin, No. 116, November, 1900, p. 263.

[9] A Case of Aneurysm of the Abdominal Aorta treated by the Introduction of Silver Wire, with a Description of Instruments Invented and Constructed by Dr. G. H. Colt to Facilitate the Introduction of Wire into Aneurysms. By D'Arcy Power and G. H. Colt, Transactions of the Royal Medical and Chirurgical Society, vol. lxxxvi., 1903, p. 365, and THE LANCET, Sept. 19th, 1903, p. 808.

wire seven inches long was found projecting into the arch of the aorta, the rest of the wire being coiled irregularly within the sac of the aneurysm and covered with blood clot, some of which was certainly formed during the life of the patient. The aneurysm was thought to be formed on one of the branches of the cœliac axis but the necropsy showed that it was derived from the abdominal aorta, that it was of the size and shape of a large orange, and that it projected forwards between the layers of the transverse mesocolon.

The apparatus consists of a trocar and cannula, a ramrod, a cartridge, and a wisp. The wisp consists of a number of fine steel wires soldered together at one end, each wire being curled over in a separate plane so that they readily expand as soon as they are at liberty to do so, though under ordinary conditions they are packed up into small bundles in which the wires lay parallel to each other. If it be preferred a cage can be used instead of a wisp. The cage consists of a bunch of fine steel wires caught together with solder at their midpoints, so that when the wires expand the cage becomes spherical. Both the wisps and the cages are made in different sizes to suit different aneurysms. Each wisp or cage fits into a cartridge or hollow metal tube open at both ends which can be adapted with ease and accuracy to the distal end of the cannula. The cartridge just holds the wisp or cage in its compressed condition as a bundle of wires lying side by side. When the operation is performed the sac of the aneurysm is exposed and if possible a purse-string suture is run round the spot to be punctured. The trocar and cannula are driven through the sac wall, the trocar is withdrawn, and the cartridge containing a cage or wisp is fitted to the cannula. The contents of the cartridge are then gently pushed along the cannula by means of the ramrod until the wisp or cage is safely delivered into the sac of the aneurysm. The cannula and ramrod are immediately withdrawn and the purse-string suture is simultaneously tightened and tied to close the puncture. When a wisp is used care should be taken to puncture the sac in a direction which, as far as possible, is estimated to be towards the plane at its opening, because the wisp expands and curls back directly it begins to emerge from the cannula and there is consequently less danger of any of the wires projecting through the opening. When a cage is employed it will probably adapt itself better to the larger sac if the puncture be made in a direction parallel to the plane of the opening. Dr. Colt claims for his instrument, and I think he claims justly, that it abolishes the three great dangers attending the wiring of an aneurysm—viz., sepsis, hæmorrhage, and the escape of some of the wire from the aneurysmal sac into the parent artery. The older method of tediously introducing a length of wire into an aneurysmal sac through the lumen of a small cannula necessarily led to a serious risk of septic infection and there was a considerable loss of blood when the operation was prolonged. Dr. Colt's apparatus enables the operation to be performed in a few seconds and the whole apparatus can be thoroughly sterilised by boiling. It has been used three times within the last few months and in every case the surgeon has expressed his complete satisfaction with the manner in which it worked. The apparatus is fully described and illustrated in THE LANCET of Sept. 19th, 1903, p. 808.




The essential parts of the apparatus.

*Electrolysis.*—Galvano-puncture was originally suggested by Pravaz the younger, who was always interested in the treatment of aneurysm, for he took as the subject of his graduation thesis at Paris in 1857, "Sur le Traitement des Anévrysmes par les Injections de Perchlorure de Fer," and for making these injections he introduced the little Pravaz syringe, though it has long been divorced from its original purpose. Pravaz employed electrolysis for external aneurysms and in the form of galvano-puncture, but the method was soon taken up by Ciniselli[10] at Cremona, who used it in cases of thoracic and abdominal aneurysms, and he was followed by James and John Duncan in Scotland. For galvano-puncture of aneurysms steel needles are employed five inches in length, insulated to one and a quarter inches of their point. Four cells of a Bunsen's battery are sufficiently effective and do not give rise to more than a bearable amount of pain. The battery should have a continuous current and the needles, if this method of operating be adopted, should be introduced from the same side near the base of the

[10] L'Elettrolisi e le sue Applicazioni Terapeutiche, opera postuma del Dottor Ciniselli Cav. Luigi, compilata dai dottori Ottoni Cav. Gregorio e Omboni Vincenzo, Cremona, 1880.

external tumour parallel to each other and one or two inches apart. The number of needles may be multiplied if the aneurysm is large and the action may be prolonged till pulsation ceases or till gas can be clearly detected on percussion. A séance of 20 minutes is generally enough for one application and this may be repeated according to the circumstances of the case. The method of simple electrolysis has yielded good results, even though they were only temporary in several selected cases, but of late years it has given place to a combination of wiring and electrolysis which is now known as—

*The Moore-Corradi method.*—Professor Corradi, the accomplished professor of the history of medicine at Pavia, suggested this combination of wiring and electrolysis to Professor Burresi [11] who employed it in a case of aneurysm of the ascending aorta in 1878. Barwell [12] suggested a treatment on similar lines independently of Corradi and the plan has since been followed up in America chiefly by D. D. Stewart.[13] The advantages claimed for the method are that instead of a soft unstable coagulum being slowly formed about the wire, as is the case when wiring alone is employed, electrolysis almost immediately produces a tough clot of considerable size. Experience has shown that the strength of the current must be rather high—from 40 to 80 milliampères—and the séance long—from three quarters of an hour to one and a half hours. It is better, too, not to have both poles in the aneurysm, as was formerly the custom, but the anode or positive pole should always be the active electrode. This pole is connected with the wire which has been previously introduced into the sac and the negative rheophore should be a large clay plate or pad of absorbent wool placed upon the abdomen or under the back. The current is brought into circuit slowly, its strength being noted by an accurate milliampère meter. It is gradually increased for a few moments until the maximum strength supposed to be necessary for the individual case is reached, and this maximum is then maintained until nearly the end of the séance, when it is slowly reduced to zero. Dr. Colt has adapted his apparatus to this method of treating aneurysm by providing the ramrod with a binding screw by which the positive pole of a battery can be brought into electrical communication with the end of a wisp previously introduced into the sac of the aneurysm. Hunner [14] says that with the combined method (Moore-Corradi) there have been treated 23 cases, 17 thoracic and six abdominal. Four of these, or 17 per cent., three thoracic and one abdominal have been cured; nine cases, or 39 per cent., showed amelioration of symptoms and prolongation of life. Death was probably hastened in the other ten cases.

### THE VENOUS SYSTEM.

It is difficult for us in 1905 to picture to ourselves the fear and abhorrence which surgeons felt towards any operation on the veins even so late as 1883. The third and last edition of Holmes's "System of Surgery" published in that year says (vol. iii., p. 170): "Numerous operations are in use for the obliteration of varicose veins. They seek either merely to produce coagulation in the varix, to divide the venous channels above or below the varices, or, finally, to remove the varicose part of the vein. These results can be obtained, firstly, by the action of caustics applied over the course of the vessel; secondly, by subcutaneous division of its walls; thirdly, by compressing it between a steel pin and a twisted suture or by some similar contrivance; or, lastly, by complete excision. ..... Except in the cases which have been referred to these operations are not to be recommended and the patient, if wise, will be content with the palliative measures of a more simple character." In England Mr. John Marshall, surgeon to University College Hospital, gave a clinical lecture in 1874 on a Case of Varicose Veins Treated by a New Operation. He advocated in this lecture that a considerable length of the veins should be excised where it is most enlarged and the operation was performed in the following manner: "The course of the vein having been marked with ink, a pin is passed under it at each end of the part to be removed. The limb is then emptied of blood by Esmarch's bandage, the skin is divided along the marked line, and the vein, previously secured by figure-of-eight ligatures passed over the pins, is cut across at each end and dissected out. The wound is then dressed after Lister's method." This lecture, published in THE LANCET of Jan. 23rd, 1875, p. 113, marks the first public recognition by hospital surgeons in England of the treatment of varicose veins by open incision, and it was not long before operations upon varicose veins became more numerous.

I find that at my own hospital—St. Bartholomew's—ten patients only were submitted to operation for the relief of varicose veins in 1875 and 12 in 1876. The results do not seem to have been satisfactory, for in 1877 only three cases are recorded and in 1878 five cases. The average number of cases admitted in the decennium 1875–1885 was 8·2 and in the years 1886–1893 it was 19. After this year the numbers increased rapidly and an average of 70 cases a year is now maintained.

The increasing confidence of surgeons in Listerian methods soon brought about modifications in the original operation. The underpinning of the veins was first omitted because it was not found necessary to make any attempt to limit the process of clotting and with aseptic wounds veins proved themselves as amenable to ligature as arteries.

The number and extent of the incisions necessary in an advanced case of varicose veins long militated against the success of the operation and a great step in advance was made by Trendelenburg in 1890 when he published his paper Ueber die Unterbindung der Vena Saphena magna bei Unterschenkelvaricen, from the surgical clinic at Bonn in the *Beiträge zur Klinischen Chirurgie*, vol. xvii. The operation recommended by Trendelenburg is so short, simple, and effective that I have been greatly interested in it and I have done various comparative operations in cases where the two legs have been pretty evenly affected. The results have been equally satisfactory on the two sides so far as I could get the patients to make definite statements. They preferred, as was natural, the operation in which there was but a single scar and with this conclusion no surgeon could quarrel, for multiple wounds mean multiple chances of sepsis. Trendelenburg's operation, however, like everything else, has its limitations. In my hands it has not been of use in cases of extensive capillary varicose veins where the whole leg is mottled from the thigh to the foot, as so often happens in young women, neither have I been satisfied in cases where there have been only one or two greatly enlarged veins, for in these cases the trunks have remained full of blood which has shown no tendency to clot or to disappear.

[Mr. Power then made a few remarks upon the modern accepted methods of treating varicocele, hæmorrhoids, and nævi, and concluded as follows:—]

It is clear from this summary of recent surgical work in connexion with the vascular system that we have not reached a limit in any single branch. There is room for improvement in the treatment of shock; the method of ligaturing the larger arteries is by no means perfect; the cure of aneurysm is still at fault, and even nævi cannot yet be treated satisfactorily. But neither has surgery itself attained to finality. Hosts of surgeons in every part of the world are enlarging its bounds and amongst them not a few are engaged in endeavouring to perfect the technique of the surgery of the blood-vessels.

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A PAPER ON

## HOSPITAL SHIPS AND THEIR WORKING IN WAR AND PEACE.

Read before the Section of Colonial and Naval Medicine of the Fifteent International Congress of Medicine, at Lisbon, April 19th to 26th, 1906,

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THAT hospital ships are a necessity in time of war is now generally recognised but I would also urge that they are necessary in time of peace—that is to say, that ships should be built and fitted for this purpose, should be commissioned and should accompany every squadron in all its larger movements. Preparedness in this matter is, I think, greatly to be desired; unpreparedness seems to me to be merely courting trouble, if not disaster.

When war breaks out, as it may without much warnin

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[11] Burresi: Lo Sperimentale, April, 1879, p. 445.
[12] Barwell: Brit. Med. Jour., vol. ii., 1886, p. 675.
[13] The Treatment of Sacculated Aortic Aneurysm by Electrolysis through Introduced Wire by D. D. Stewart, M.D., American Journal of the Medical Sciences, July-December, 1892, p. 422, and July-December, 1896, p. 170. See also Transactions of the College of Physicians of Philadelphia, 1897, p. 35.
[14] Loc. cit.

what an amount of trouble and anxiety would be saved if, instead of having to select ships and have them fitted as hospitals, thoroughly equipped hospital ships were already with each squadron. Then, time occupied in fitting out such ships is also of great importance; the Japanese certainly did this in the case of the *Saikio Maru* and the *Kobé Maru* in a fortnight, but I doubt if any other nation could do it in anything like this time or as efficiently and the chances are that many details might be overlooked and the ships sent to sea insufficiently equipped. Every naval officer knows that a newly commissioned ship is not so efficient as one in which the *personnel* has had time to become acquainted with the *matériel*, and certainly this would be no less so in the case of a hospital ship. Also, suppose a great battle, as is highly probable, is fought at the very outbreak of war, how fearfully handicapped a fleet would be, more especially if victorious, in having to look after all its wounded as well as many of the enemy's; how space would have to be taken up for their treatment below decks; and how, in the absence of sufficient light and air, to say nothing of comfort, a serious risk would be run of lives being lost which would otherwise be saved.

In the construction of a hospital ship the following points present themselves for consideration: (1) Kind of vessel required and size; (2) disposition of accommodation for (*a*) sick officers and men, and (*b*) officers and crew of ship; (3) ventilation and heating; (4) sanitary arrangements; (5) laundry arrangements; (6) ice making and cold storage; (7) operation room; (8) x ray room; (9) bacteriological room; (10) dispensary; (11) repairing room for instruments; (12) dental room; (13) store rooms; (14) boats; and (15) means for transportation of cots.

1. *Kind of vessel.*—A hospital ship should be capable of accommodating not less than 200 cases; this means that the ship should be about 8000 tons. There should be a deck-house running from nearly right aft to five-sixths of the distance forward; a main deck principally for the accommodation of the sick and a lower deck for other cases and for the accommodation of the sick berth staff and the crew. On each side of the deck-house there should be a wide alley-way extending to the ship's side and covered by wooden planking, forming a flying deck for the housing of boats and providing a shelter for convalescents or for the open-air treatment of pulmonary cases. It is important that a hospital ship should have speed so that she can keep up with the fastest cruiser of a squadron and also be able to make trips to port and return with as little loss of time as possible. The height between decks (main deck) should not be less than eight feet.

2. *Disposition of accommodation: upper deck, from aft forward.*—Abaft all there should be a small mortuary and post-mortem examination room, having a cemented floor and with the sinks discharging by special pipes. On both sides of the ship aft lavatories and bathrooms should be fitted for the officers of the ship and in front of these, placed amidships, there should be a large hatchway leading to the main and lower decks. Immediately in front of this the deck-house should begin in which should be cabins on both sides for officers of the ship, a saloon forward of these to occupy both sides, a pantry, and a smoking-room for ships' officers on one side and one for convalescent officers on the other. Succeeding these should come the main hatchway leading to both main and lower decks. In front of the hatchway, alongside the funnel-casing, the cooking galleys might be placed one on each side, and after these rooms for bacteriological, x ray, and dental work, succeeding these a room for the repairing of instruments, the preparing room, and in the foremost part of the deck-house the operation room. The fore hatchway should be placed well in front, and beyond that, in the bows of the ship and quite separate from the deck-house, the soiled linen room, washing room, disinfecting room, and laundry.

*Main deck, from aft forward.*—In the after part the baggage rooms might be placed next a saloon for sick officers on one side and the library on the other, the passage way being on the same side as the latter. Succeeding these should come the cabins for sick officers on either side, and amidships, separated by a passage from the cabins, linen rooms and utensil rooms might be placed. Ahead of these, on one side, the pantry, latrines, and bath rooms for sick officers might be placed, similar accommodation for men being on the other side. Succeeding these should come the general medical ward extending from side to side of the ship. Forward again of this might be the dispensary amidships, on the port side a smoking-room for men and pantries and on the starboard lavatories and bathrooms. On each side amidships here the lifts from the cooking galleys would come down, and such space as is not required for them could be used for linen cupboards, &c. Forward of these the general surgical ward might be placed, extending, as in the medical ward, from side to side of the ship and communicating with the preparing room above by a lift. The fore hatchway would be placed next, and beyond this the special cabins for zymotic cases with their own latrines and bathrooms on one side and on the other, separated by a dividing bulkhead, cabins for special cases.

*Lower deck.*—Special accommodation would here be provided for the sick berth staff and for the ship's company, with corresponding latrines and bath arrangements. Two cabins for lunatics should also be placed here and other cabins for special cases as required, the rest of the space being taken up by store rooms, &c.

3. *Ventilation and heating.*—Ventilation throughout should be by natural means as far as possible, but for use in hot weather there should be a liberal supply of electric fans, the number provided having a due regard to the size of the space in which they are to be used. The cabins, bath-rooms, &c., on the upper deck will be sufficiently ventilated by their ports and doors, but the saloons and smoking-rooms should have overhead apertures (skylights), as should also the operating room, and there should be special uptakes from the galleys to the boat deck. The various cabins for sick officers and their lavatories on the main deck, besides having large scuttles, should have supply and exhaust ventilation through cowls on the upper deck, and the same applies to the general medical and surgical wards, and, in fact, to all the spaces on this deck as well as to the lower deck. The general medical and surgical wards in addition should have a large skylight running centrally over each. The cowls should be placed at intervals on the upper deck and communicate by pipes leading overhead and along the floor deck respectively to each cabin, a means for closing (shutter) being fitted to each of the inlets so that in stormy weather too much draught is not set up.

The ship should be heated throughout by steam-pipes running along the sides in the case of the main and lower decks and amidships in the upper deck cabins; radiators should also be fitted in the general wards and two or more stoves, if a suitable uptake can be made for the chimneys. The steam-pipes should have their supply directly from the main boilers. Special means should be taken to insure the sufficient heating of the operating room, as the keeping of a patient warm does much to obviate shock during an operation.

4. *Sanitary arrangements.*—The number of latrines required is about 5 per cent. of the cases carried. There should be urinals in each set of water-closets, the receptacles being of thick glazed porcelain and not of metal, which is liable to accumulate a deposit and difficult, therefore, to keep clean; a free flushing by the sea-water should be assured in each case. Hot and cold water should be obtainable in the bathrooms at all hours. For the cleaning of bedpans and urinals there should be a special tap for the purpose.

5. *Laundry arrangements.*—The soiled linen should be collected in a special room on the upper deck forward next to the washing room; the washing is best done by steam-rollers, a centrifugal machine worked also by steam being used for getting rid of most of the water afterwards. It should then be passed into the disinfectors, dried by hanging on wooden "horses" which run in and out of a chamber, the atmosphere of which is dried by steam heat; it should then be mangled and ironed and conveyed to the special cupboards below. Such things as operating gowns, towels for operating room, &c., should be sterilised in their own metal cases and kept in these in the preparing room till required.

6. *Ice-making and cold storage.*—It is essential that ice be obtainable on board at all times and if it cannot be made in considerable quantities provision should be made for the carriage of it, not only for preserving food but for use in the general treatment of the sick; in any case cold storage is required. Ice chests for daily use should be provided in each set of wards.

7. *Operation room.*—This room seems to me to be best placed in the foremost part of the deck-house, that position insuring more light and a minimum of chances of dust or "blacks" from the funnels; it should be lighted by scuttles at the side and in front and overhead also. A + 30 electric light

should be capable of being brought directly over the operating table and there should also be a wandering lead with a reflector for use if operative procedure is required at night. Special arrangements for heating, in the way of extra pipes, should be fitted so as to insure a temperature of 80° F. if necessary. All the corners in the room should be rounded off; a tiled floor is preferable if it can be accurately laid, otherwise the floor should be covered with strong linoleum, the joinings of the different pieces being filled with putty or covered by thin strips of lead accurately laid and nailed down. Wooden gratings are required for the operator and his assistants to stand on so as to prevent slipping on a wet floor. The bulkheads and roof should be as smooth as possible and covered with several coats of white enamel paint. The operating table of strong and simple pattern should be on rubber wheels, but capable of being fixed in any position by locking of the wheels, or it might revolve on a central fixed pedestal with locking arrangements at four points; it is advantageous, I think, that the table should be moveable in some way in order that the part to be operated upon may be brought into the best light. Two metal screw-seat stools are required, one for the anæsthetist and the other for the operator in performing such an operation as that for hæmorrhoids. Three tables are necessary for instruments, sponges, and anæsthetics; these should all be trough-topped and have rubber wheels such as are on the operating table, and by means of a rail-guard they (and the stools) should be made fast to one of the bulkheads when not in use at sea. Six covered galvanised metal jugs are required, of about one gallon capacity each, to carry sterilised water or lotions, and a covered galvanised bucket should be fixed under the operation table; three enamelled basins are also required.

The preparing room should communicate directly by a lift with the surgical ward; it should contain the instrument cases fixed to the bulkheads, case for anæsthetics, &c., wheeled table or ambulance for conveying patients from the lift to the operation table, basins for the operator and his assistants to wash in, and a sink; the drain-pipe from these basins and sink should not pass into any latrine pipe but directly overboard. The metal cases of sterilised dressings, aprons, gowns, &c., should be kept here as well as the steriliser for instruments.

8. *X ray room.*—All the apparatus necessary for x ray work should be placed in this room and closely fitting dark screens should be attached to the shutters of the scuttles. A small annexe should be fitted as a photographic developing room. The x ray room could also be used for ophthalmoscopic examinations.

9. *Bacteriological room.*—The bulkheads of this room should be fitted with racks for the various bottles and plant generally. The incubators should be easily removeable for cleaning, the microscopes also. Taps for hot and cold water are required and a sink.

10. *Dispensary.*—The dispensary for the compounding and issue of the drugs in daily use is best situated near the medical ward. All the drugs and chemicals should be in locked racks, the dispenser having one set of keys and a spare set kept by the medical officer in charge. This room should be especially well lighted by electricity; a wandering lead is necessary. On the lower deck, or below that, there should be a large dispensary store, also well lighted, provided with a table and weighing machine, and special arrangements must be made in the form of slate or earthenware tanks for the storage of strong chemicals and inflammable drugs, the jars containing which being placed in the tanks and packed round with asbestos.

11. *Repairing room.*—This is a most necessary adjunct, as the surgical instruments constantly require resetting and sharpening; and not only those of the hospital ship but also those of the various men-of-war. Lathes with grindstones are required and a complete set of implements. A qualified instrument-maker should be in charge.

12. *Dental room.*—A small room is required for dental work; good light, both natural and artificial, is necessary. Fixed cases are required for the instruments and the principal fittings are a dentist's chair and a dental engine; the latter could be worked from an ordinary electric fan by removing the blades.

13. *Store rooms.*—Such space as may be available on the lower deck might be utilised for medical stores—i.e., ward necessaries—and further provision should be made for these in the holds as required.

14. *Boats.*—For the removal of patients from a man-of-war special boats are required. These should have a deck-house, occupying the whole space, except a gangway all round, and projecting above the gunwhale about two feet: this upper part should have scuttles all round it for light and air and there should be a central hatch opening fore and aft to enable the cots to be let down easily; they should be capable of taking 12 cot cases and 12 others. These boats would be towed by steamboats, four of each being supplied to each hospital ship.

15. *Means for the transportation of cots.*—For the transportation of cot cases from the boats to the ward davits are required at each gangway and lifts from the upper to the main deck. There being three large hatchways from the upper to the main and lower decks, davits should be placed on the ship's side, both port and starboard; cots would thereby be brought to the upper deck, carried at once to the hatchway opposite them, and thence sent below by the lifts. The clearing of boats would thereby be facilitated and the patients got below as rapidly as possible.

### CABINS AND WARDS FOR OFFICERS AND MEN.

A. *Officers.*—About 25 beds in all are required for officers. It is unnecessary that each officer should have a cabin to himself, as the difficulty of administration would thereby be increased; there should be five or six single-bed cabins for special cases, a four- or five-bed cabin for warrant officers, and the rest of the accommodation divided into a ward for officers confined to bed and one for those able to get about. In all cases swinging cots should be used and not bunks, in order that the patients may be approached from either side. Mosquito nets, bed-tables, &c., should be provided, as in the general wards, and in each single-bed cabin some kind of a fixed table is required, a chest of drawers, and a chair and a washstand.

B. *Men.*—The general arrangements of the medical and surgical wards should be practically the same. Sufficient space should be left amidships under the central skylight for mess tables and forms. The swinging iron cots should be arranged in parallel rows, fore and aft, in one tier, and slung from iron uprights, but for use in war time if necessary spare cots could be carried in the hold to be placed in a double tier in the wards as required. Each cot should be fitted with a wire basket for holding a handkerchief or books, and there should also be a light table capable of being placed across the cot or of lying parallel with it when not required. Mosquito curtains should be provided for each cot and a certain number of plain white curtains to act as screens if required; these should not be hung from the roof, as such a fitting would interfere with ventilation and with a second cot being placed overhead, but from iron rods supported by uprights attached to the sides of the cot, and in the event of a second tier cot being slung the curtains of the lower might be attached to the bottom of the upper. Lockers for clothing should be placed round the bulkheads with numbers corresponding to the cots. All the scuttles in the hospital accommodation should be provided with wire gauze screens, so that should the draught be too great it may be modified without the necessity of closing the scuttle.

The electric light should be controlled in groups by key switches in charge of the second sick-berth steward on duty and the globes should be fitted with a moveable screen so as to prevent direct glare into patients' eyes; four wandering leads are required in each general ward and these should be fitted with concave lateral reflectors and have switches of their own. Electric fans should be supplied for use in the scuttles or ventilating shafts and two strong iron moveable pedestals for each general ward to support a fan if it is necessary to direct a current of air on to a patient directly. The roofs and sides of the wards should be painted with white enamel and the floor planed as smooth as possible, then stained and polished. If possible, in each ward there should be a shelf for books. Electrically heated kettles are necessary for each general ward and one for the officers in their pantry. Ice chests are also required for each ward and there should be an aerated water machine as well.

In the surgical ward special cots for fracture cases should be placed in groups by themselves and with extra space all round them, so as to be readily got at from every side. Three dressing tables are required, on wheels, one for the dressings themselves in their various sterile metal cases, another for lotions and instruments, and a third, in some such form as a covered slop pail, for soiled dressings. In both medical and surgical wards there must be a locked cupboard for medicines.

In speaking of sterile dressing cases I should like to advocate that such things as sterile gauze, cyanide gauze, &c., should be supplied in rolls horizontally placed on revolving spindles in drum-like cases as nearly air-tight as possible and with the opening arranged valve-like at the side, so that just sufficient material could be drawn out as was required at a time, the rest remaining uncontaminated in the drum.

Some arrangement must be made for the collection and destruction of soiled dressings. They should be burnt, preferably in a destructor for the purpose, but if this cannot be conveniently arranged for, then in one of the main furnaces down below. The dressings as they are removed from a patient should be placed in paper bags, each of which would be closed by twisting its neck, and collected in the covered slop-pail and conveyed in it to the furnace.

The pantries for both the general wards should if possible be arranged at the ship's side opposite to where the lifts come down from the galleys. Sinks with hot and cold water are required and all washing of table crockery should be carried out here. Urinals and bedpans should be cleaned in a special water-closet in connexion with each set of latrines, where a jet of water can be applied from a special pipe for the purpose.

*Wards for infectious cases.*—These should be single-bed cabins; no special fittings are required but attention should be particularly directed to securing a hard, smooth surface to the bulkheads and floor, and to the position of the uptake ventilation on deck. For use in pulmonary tuberculous cases Japanese paper handkerchiefs should be supplied, into which the patients should be directed to expectorate; after use the handkerchief should be tightly squeezed and then placed in a covered metal pot, ultimately being burnt in the same manner as the surgical dressings. One or two hip-baths and portable water-closets are also required.

### PERSONNEL.

A. *The medical staff in war time.*—One fleet surgeon as principal medical officer; one staff surgeon; four surgeons; one chief sick berth steward as butler; five first-class sick berth stewards: one for medical ward, one for surgical ward, one for officers' ward, one for infectious ward, and one for operation room, instruments, &c.; five second-class sick berth stewards: two for medical ward, two for surgical ward, and one as assistant dispenser; 25 sick berth attendants: nine for medical ward, nine for surgical ward, three for officers' ward, two for infectious ward, and two for special duty; one qualified dispenser in charge of stores; one instrument repairer; and four specially qualified cooks.

B. *The medical staff in peace time.*—One fleet surgeon as principal medical officer; three surgeons; one chief sick berth steward as butler; five first-class sick berth stewards as in war time; 15 sick berth attendants: six for medical ward, six for surgical ward, two for officers' ward, and one for infectious ward; one qualified dispenser in charge of stores; one instrument repairer; and two specially qualified cooks.

### DUTIES AND WORKING OF HOSPITAL SHIPS.

A. *In war time.*—In time of war there should be at least two hospital ships to each squadron, or more, depending on the number of men-of-war constituting it. To one of these hospital ships the more serious cases occurring in the fighting ships should be transferred as often as opportunity occurs, so as to leave the latter unhampered and fit to engage the enemy at the shortest notice and in the most favourable circumstances. If this is not done such cases would have to be treated below-decks in their own ships, and the manner of doing so could not be other than unsatisfactory and with the great possibility of evil to themselves or, in the event of infectious cases, to others. They would also occupy space required for the accommodation of the injured in battle and their removal would leave the medical officers and sick berth staff free to devote all their energies to the wounded in battle.

Of course, in certain cases it might not be possible, from stress of weather or from the rapid movements of the squadron, to keep all the men-of-war clear of serious cases up to the time of an action, and probably there will always be some such on board, but still I think that every endeavour should be made to remove them in order that the fighting ships should be in as high a state of efficiency as possible.

I should in the above way fill up one hospital ship at a time, the other, or others, being kept for the emergency of battle. A certain number of these cases would probably return to their own ships cured, but this altogether depends on the nature of their complaints and the time which elapses between their reception on board the hospital ship and the battle. When full up or nearly so the hospital ship should be sent to the nearest hospital ashore and there discharge her sick, renew her supply of stores, and rejoin her squadron as soon as possible.

On an engagement taking place, whether of a running nature or of opposing squadrons circling round each other, all that the hospitals ships could do would be to keep as clear as possible without losing touch. Should a man-of-war be disabled and not pressed by the enemy a hospital ship would then approach her and take the wounded on board, the whole crew, if the former were sinking, but in this case the uninjured would be transferred to another man-of-war as soon as possible after the fight was concluded. In the event of a ship of A fleet coming up with a totally disabled ship of B fleet, and it being necessary for the latter to strike her flag, I presume that a hospital ship of B fleet would still approach and receive the seriously wounded, the surgeons of the A ship probably supervising which cases should be permitted to go to the B hospital ship and which they considered should be made prisoners on account of their injuries being such as would not be likely to prevent their rejoining the fighting line in a short time. It is unlikely that any nation would wish to encumber itself with the enemy's seriously injured and therefore they would permit all such to go on board their own hospital ships.

At the conclusion of a battle I presume the hospital ships of the victorious fleet would go to the nearest of their own men-of-war first and remove the cases from her, then taking the other ships in rotation, always having regard to any signals which indicated that a ship was so damaged as to be in danger of sinking and proceeding to her assistance in that case first. After collecting the wounded the hospital ships would make all speed to the nearest of their own shore hospitals and having landed their cases rejoin their squadrons without loss of time. I do not know whether hospital ships would be allowed to land their cases at neutral ports, but if they were I suppose that the men who recovered from their injuries would be interned till the end of the war, those who were capable of bearing arms again at any rate. Further than what has been above mentioned, what would happen to the hospital ships of the defeated fleet is hardly possible to say, as everything would depend on how much damaged the men-of-war were; certainly, if able to escape the latter would not wait to transfer wounded anywhere near the scene of the action; the senior officer would probably make signals ordering the hospital ships to pursue such course as was considered necessary.

Besides their purely naval function, the employment of hospital ships for the conveyance of military wounded has to be considered. The sick and wounded of a naval brigade landed for duty ashore would naturally be removed home, as necessary, by the hospital ships, but it would be necessary also to do the like by the military, and for this purpose there should be ships of the mercantile marine selected during peace time which can be speedily converted into hospital ships as required.

B. *In peace time.*—There should be one hospital ship attached to each squadron and one to each of the large home hospitals, the latter being used as will be stated later, and also acting as reserve ships for war time when they could be despatched at once to supplement those of the various squadrons. I think it well also that there should be a certain number of ships of the mercantile marine selected during peace time to be converted into hospital ships if required in war, the whole detailed plan for their conversion being made out and ready for application.

In peace time a hospital ship accompanying its squadron would be available for the treatment of all the more serious cases of accident and disease occurring in such squadron; they would then receive better attention than is possible in a man-of-war, air, light, and freedom from noise would be assured, infectious cases could be isolated, and lunatics would have accommodation suitable to their condition. Further, injuries could be treated aseptically, a condition which is rarely obtained and only with the greatest difficulty in men-of-war. Most of us in the Naval Medical Service have felt the very nearly insurmountable difficulty there is in obtaining asepsis for wounds when having to operate in a man-of-war; first and foremost the operation has most likely to be performed in the sick bay, a place used as a ward, dining-room and dressing-room for all kinds of cases;

it may be possible to obtain permission from the captain of the ship to use a casemate or screened-off part of the battery deck as an operation theatre, but there would be considerable difficulty in getting necessary arrangements made, and at the least the operator must run the risk of distractions from noise all around him, as unless the whole routine of the ship be brought to a standstill noise of some sort is certain to occur. The difficulties of sterilising, and keeping sterile, the dressings are great, and though the hands of the operator may be something like surgically clean those of the sick berth staff in attendance can hardly be expected to attain anything like this considering their multifarious duties; all this would be obviated if we had a hospital ship to which to send our cases.

Again, hospital ships in peace time could be used to great advantage: 1. For conveying patients or invalids to hospitals on shore when the squadron was at a distance; cases at present have often to be kept on board men-of-war for considerable periods on account of there being no means available for getting rid of them. 2. For conveying invalids home from foreign stations under the most favourable conditions as to accommodation, treatment, and supervision. 3. For taking to sea for short cruises or to more salubrious harbours patients from shore hospitals, for whom change is often a great desideratum. It often happens that there are cases (e.g., pulmonary) in shore hospitals abroad when the climate is unsuitable, but who cannot be sent home, say, to face an English winter, and in these much good would surely be attained if they could be placed under better hygienic and climatic conditions. 4. For taking to more salubrious climates convalescents from home hospitals (e.g., Haslar to Madeira). There are many cases of disease (fevers) contracted abroad which, though improving under treatment at home, convalesce but slowly, especially during the winter and early spring, and it must not rarely happen that officers, but more especially men, cannot be allowed to go to their own homes during convalescence on account of the climatic conditions there being unsuitable for their complaints; in such cases it is surely to the advantage of the country that means be provided for securing to them the best prospect of a speedy return to health, such being also from a financial point of view the best in the long run. Also, if such arrangements as these were known to exist it would be an additional inducement, and not a small one, for both officers and men to join a service in which every care and attention were shown to those who contracted disease due to the conditions under which they were called upon to serve. 5. For instructional purposes. The hospital ships would provide excellent training for the surgeons and sick berth staff of the squadrons to which they were attached, and as from want of the opportunity for seeing cases most naval medical officers find it very hard to keep up their work in the constantly improving methods of treatment, here is one way at least in which this may be overcome. For the sick berth staff also this is most important.

I should like to see a regulation put in force by which medical officers and the members of the sick berth staff should, unless having served in a shore hospital within three years, serve in a hospital ship for six months out of every two years of their appointments afloat.

It may be said that if all the more serious cases are always to be transferred to hospital ships the medical staff of the warships will cease to take much interest in their professional work, but I do not think this will be so; no man who values his self-respect will become slovenly in this way merely because he has only minor cases to deal with; many a case trivial at first may become, as every medical man knows, most serious if proper attention be not accorded, and this of itself should be sufficient to deter a man inclined to "take things easy" from neglecting his duty. Also for the junior officers and the sick berth staff the knowledge that they must serve repeatedly in a hospital, whether ashore or afloat, where their abilities will be more highly tried and where the opportunities for the senior medical officers of observing their work will be much greater, will prevent them from becoming careless.

I have endeavoured to lay before you as succinctly as possible my ideas of the requirements of a hospital ship and what her functions would be in peace and war. I am quite aware my views are open to criticism on many sides, but it is only by bringing such views forward and submitting them to the criticism of those who understand the subject that a sound scheme for the establishment of hospital ships can be formulated.

# REMARKS ON LEPROSY IN CAPE COLONY.[1]

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So much has recently been written on the subject of leprosy, it has been the occasion for so much discussion, that one almost needs to make an apology for introducing the question. The word "question" is, indeed, writ broadly all over what we know as to this ancient disease. Still, ancient, indeed prehistoric, as it no doubt is, leprosy is with us as a very present trouble. This is certainly the case with us in South Africa and to those visiting the country who are interested in disease the problems of leprosy in our midst present many features which must attract attention. It is, if not a burning question, one which may well be described as constantly smouldering, lighting up at intervals into periods of activity. The problems connected with it are not only pathological; there are administrative, legal, and even moral questions which arise out of its existence among us which need to be handled with great circumspection, moderation, and sagacity. One has only to turn to the map of the world to see how widespread the question is; it may almost be said that there exists hardly a British dependency or colony which has not its leprosy question. In India the patients approach in numbers 200,000, so great a multitude that the administration, skilled as they are in complicated social problems, are reluctant to put in force the necessary regulations for its control; while in Australia, small as is the number of the affected, alarm is felt at the insidious progress of the disease and vigorous measures to check its spread are being enforced. That such measures are urgent and necessary the history of leprosy in Cape Colony most clearly shows.

There are a number of countries in which we can with a very fair degree of accuracy trace the progress of leprosy within comparatively recent times. Such are some of the Pacific islands, Australia, some West Indian Islands, and the States of Central and South America, and among such countries we may fairly include South Africa. When the land was first colonised by Europeans towards the latter part of the seventeenth century the aboriginal races who met the invaders at the south-western extremity of the continent were the Hottentots and the Bushmen and I have been able to find no satisfactory evidence of any weight to show that leprosy was present among those races. It is true that some have stated that they were affected and not only they but also the Bantu race, who about the same time were pressing the more ancient inhabitants into the south-western corner of the continent. No satisfactory evidence is given of this either. We all know the rough-and-ready diagnosis of leprosy which is given to any cutaneous affection among savages by such untrained explorers as first came in contact with the natives of South Africa and little more weight is to be attached to traditions of disease among such native races. Besides, the very habits of these people precluded their being subject to this disease. The Bushmen were nomadic hunters, constantly moving from place to place in pursuit of game. The Hottentots were also largely wanderers, driving their flocks of cattle from one locality to another but never advanced so far towards settlement as to cultivate or to till the ground, and in this connexion it is to be noticed that those parts of the country which still retain the last pure remnants of those nearly extinct peoples are the parts which on the evidence of our statistics are practically free from leprosy. That the great incursion of the Bantus which resulted in the peopling of all the south-eastern parts of South Africa with that race brought leprosy in its train is in the highest degree improbable and unsupported by evidence of any value; the disease is not one to survive those long decimating campaigns, and the Bantus have always in their native state been remarkable for their attention to physique and for the extrusion by summary and effectual process of the chronic sick among them.

The spread of leprosy in this country has been from the south-west to the north east, following, indeed, the track of the new civilisation which has progressed in that direction.

[1] A paper read before the Physiological Section of the British Association for the Advancement of Science on August 18th, 1905.

The earliest cases to attract attention occurred in the neighbourhood of the Cape Peninsula near the first settlement, Cape Town. During the early days of Dutch colonisation, when the Cape was under the control of the Dutch East India Company, many servants and slaves were brought from the East, from those very parts which had long been infested with leprosy. From the centre and hotbed of leprosy in the Far East, south-eastern China, it had been carried by the emigrating coolies all over the eastern archipelago to those very parts of the Dutch East Indies from which Malays and others were brought by the Dutch traders to their new colony at the Cape, and as even at that time the climate was noted for its healthfulness it is most probable that invalids suffering from tropical diseases settled in the Cape Peninsula. It is practically agreed on all hands that the leprosy in Cape Colony was introduced by Malays or coloured servants or slaves imported from the Dutch East Indies. Mr. Jonathan Hutchinson, indeed, has ventured to give a characteristic interpretation to this generally accepted account of the initial method of its introduction. He states that as the early Dutch farmers were unable to find food to supply their Hottentot labourers Malays were brought from the East for the purpose of salting and curing fish for a food-supply and that the badly cured fish was the means of conveying and disseminating leprosy and giving it the hold on the coloured population at the Cape which it has ever since increasingly maintained. But we know well from the history of Chinese- and Malay-introduced leprosy in Australia and elsewhere that such immigrants did not in all cases arrive for the purpose of curing or dealing in fish, and also that their dietetic and social habits were revolting rather than acceptable to the populations they were thrown among and yet that leprosy followed on their immigration.

As the new colony at the Cape became more settled and organised the intermingling of the various people transplanted from the East, from Java, Ceylon, Madagascar, and Mozambique, and other eastern lands, with the indigenous stock, has produced a heterogeneous and motley population of every gradation of colour, feature, and physique, and this constitutes the coloured or mixed race which from an early period, by its serviceable qualities, has been employed in all agricultural, domestic, and industrial duties at the Cape, and it is this class in the Colony proper, excluding the native territories, which shows the preponderating number of those affected with leprosy, and it is undoubtedly to this class that we must, in the first instance, attribute the passing of the disease to the healthy European settlers. Numerous instances are on record where the disease in a Dutch farmer's family seemed to have its origin in the presence of a leprous farm servant or domestic. The following authenticated and suggestive history is selected from many others submitted in evidence to the Leprosy Commission of 1895. Leprosy was first noticed on a certain farm in the Western Province in the case of a Hottentot labourer who had been working on it for a short time; next a little girl, the farmer's daughter, became affected; then the waggon-driver, a close intimate of the Hottentot, showed unmistakeable symptoms; then followed the farmer himself; then a girl who had come to nurse the farmer's daughter; and finally the farmer's niece who frequently visited the farm and who was intimate with the leprous daughter of the farmer became herself a victim to the disease.

In 1756 it was noted with alarm that the families of two European farmers in the Stellenbosch district were affected with leprosy and they were partially isolated on their own farms, but nothing further appears to have been done and the disease spread apace, causing serious anxiety to the Government in the early years of the nineteenth century, so much so that an asylum was set apart for sufferers. It was most prevalent in the Caledon district and then in 1822 the settlement was placed on a spot which by some grim irony was called Hemel en-Arde—heaven on earth. It was an isolated spot and patients were brought from long distances to it, for the disease had by this time become widely disseminated in the colonised area. From 1822 till 1845, when Robben Island was constituted the asylum, upwards of 400 cases were confined there. But the patients isolated at Hemel-en-Arde and at Robben Island up to the time the present stringent Leprosy Repression Act was inforced in 1892 were voluntary cases and doubtless therefore of the most severe and helpless kind, so that during that long period a far greater number must have been at large. The passing of the Act was the recognition that the evil had now assumed most serious proportions, leprosy was spread far and wide throughout the Colony, had obtained a firm hold of the dense native population in the Eastern Province, had invaded the native territories proper and crossed the frontier into the Orange Free State, the Transvaal, and found a nidus among the Zulus of Natal.

As soon as the Leprosy Repression Act was put in force it was evident that Robben Island would not suffice to accommodate all the affected, and a large asylum was established in a beautiful and fertile spot in the centre of the native territories at Emjanyana. Its inmates are now practically as numerous as those of Robben Island and the question of accommodation there is equally urgent. I may mention here in connexion with the spread of leprosy a factor which has materially contributed to it in the eastern region of the native territories. In 1862 the British Government allowed several thousand Griquas under Adam Kok to settle in that part of Kaffraria now known as Griqualand East. These were a race of mixed Dutch and Hottentot descent who had previously lived in the large district west and north-west of Kimberley. Leprosy is known to have been firmly established among them. They migrated to the number of 15,000 to a depopulated tract of country and founded the settlement of which the town of Kokstad is now the centre. Here a leprous focus was established from which the disease spread widely in that part of the country and for some years there has been a small asylum in the neighbourhood of the town. I happened to visit that district in 1898. An improvement has no doubt been effected since but the evidence of the prevalence of leprosy in that district and of its tolerance by the inhabitants at the time was such as to give rise to grave concern; it was evident that the disease had taken a firm hold and was viewed in a somewhat fatalistic spirit.

As indicating to some extent the increase and spread of leprosy in Cape Colony, though no doubt the figures are accentuated by a more thorough application of sanitary enactments, I may quote some statistics comparing the year of the census of 1891 with that of 1904. In 1891 there were 626 known lepers, and in 1904 1230, a very considerable increase in both Europeans and other than Europeans. The increase in the total leprosy-rate per 10,000 was 24 per cent., the European increase was 15 per cent., and in other than Europeans 25 per cent. The persons in the colony enumerated as leprous increased from 1891 to 1904 by 81 per cent., while the population increase was 57 per cent. The Hottentot and mixed races have the highest leprosy-rate, and the Europeans the lowest, while the Kaffirs at present occupy an intermediate position. Of the 1230 persons enumerated as leprous in 1904, 1087 were in asylums or other public institutions and 143 in private dwellings. On June 30th, 1904, 479 of them were segregated on Robben Island and 492 at Emjanyana, while six apparently were at the small station at Kokstad. The above figures for the colony do not include about 100 leprous persons from the Orange River Colony who are segregated at Robben Island. In the census report the matter is well summed up as follows: "There has been a decided increase in leprosy and it has not yet been adequately coped with for lack of asylum accommodation; many hundreds of the leprous die in their homes under no medical supervision or regulation. The medical officer of health of the colony estimated the number of lepers still at large in 1903 as at least 1000. Between 1893 and 1903, on an average 286 fresh cases have been discovered per annum without any very special endeavour to discover fresh cases, but only 190 per annum have been sent to asylums. There is no decided sign as yet of diminution of the number of occurring cases, notwithstanding the large numbers sent to the leper asylums." These are not very cheering figures for those who desire to see leprosy diminished to a vanishing point at no distant date; but when we learn from the report of the medical officer of health that the discovery of the leprous depends entirely on notification made by medical men and persons under whose observation they may chance to come, so that only well-marked cases are brought to light, the prospect seems still more remote. In the native territories especially, it is stated, "only some of the more obvious cases have been brought to notice."

Sufficient has now been said to show how from small beginnings the disease has spread over the country and become a most serious problem. The numbers in Cape Colony at present approach those existing in Norway in 1856 and it has taken half a century of segregation in a civilised and educated people to reduce that number to less

than 500. With our large coloured and native populations we will be fortunate if we attain anything like an approximate success by the middle of the present century. It need hardly be said that there is no evidence whatever that this continuous extension of the disease, geographically and numerically, is due to any particular form of diet or racial, hereditary, or climatic tendency. In all the circumstances fish, cured or uncured, fresh or unsound, or tainted or manipulated in any conceivable way, is about the last cause one would pitch on in South Africa as affording an explanation. One only needs to travel among the natives of the upland regions to be convinced of this; the facts were, indeed, too strong even for Mr. Jonathan Hutchinson, and to explain the communication of the disease to persons who clearly had never been exposed to fish contamination he conceived the "commensal" mode of communication, the disease being transferred from the affected to the healthy by food infected by leprous hands and thus conveyed to the body by means of the alimentary tract. This explanation, he contends, embraces all those cases of communication which cannot be explained by the assimilation of contaminated fish. This is certainly an enormous step on his part towards the admission of personal communication of the disease and yet even this lacks supporting evidence. When I was medical officer on Robben Island I had an opportunity extending to a period of seven years of examining the pathological conditions in a large number of necropsies of leprous individuals which were performed with some care, and I cannot recall a single case where the absorptive apparatus of the alimentary tract was the seat of leprotic lesions. This freedom was, indeed, very remarkable and unmistakeably pointed to the conclusion that this was not one of the channels by which the bacilli reached their nidus of growth in the body. Of course, in a bad nodular case bacilli must have passed down the canal in enormous numbers and yet the mesenteric lymphatic glands do not show leprotic invasion. Leprous ulcers, in my experience of the mucous membranes of the stomach and intestines, are never found. But in those cases where lepropsy is complicated with tuberculosis tuberculous ulceration of the intestines and infiltration of the mesenteric glands with the inflammatory reactive products of the tubercle bacillus were as common as might be expected. The difference in the action of the two bacilli was in this respect most marked, as it is indeed in so many other vital reactions, so much so, indeed, that it seems extraordinary to hear the suggestion made that a specific relationship exists between the two bacilli. Later I shall allude to some of the other remarkable selective activities of the bacillus lepræ, but here I may say a word as to the common combination of leprosy and tuberculosis in the same individual. The maculo-anæsthetic variety of leprosy is much more frequently affected with tuberculosis than the nodular and tuberculosis is the usual cause of death in this clinical form. But occasionally a nodular case may be infected by the tubercle bacillus and then the two diseases strive together for the destruction of the unfortunate patient, pursuing perfectly independent courses, and in point of rapidity of action and virulence the bacillus tuberculosis soon anticipates the bacillus lepræ in its lethal effect; it possesses the toxic power of causing coagulative necrosis in the cells surrounding it, a property entirely absent in the bacillus lepræ, its absence accounting for many of the peculiar characteristics of leprosy.

In the Colony the districts where the disease first made its appearance unmistakeably are still those where it is most abundant; Caledon, where the first leper hospital was established, still holds a bad pre-eminence, the proportion of the population affected amounting for all races to nearly 5 per 1000, a proportion which decreases radially in the surrounding districts of the western province. The thickly populated district of Stockenstrom in the eastern province, adjoining densely stocked native districts, is another area where the proportion of affected is nearly as large as in the west, and here also we notice the same radiating diminution in the surrounding districts. Another region where the proportion is fairly high is that surrounding, and to the west of, Kimberley, where it is 2·5 per 1000. It will thus be seen that there are large districts in the colony where leprosy is endemic and that these districts differ from each other in geographical position, climate, and character of population; they agree in the considerable number of individual leprous foci they contain, and have for a long time contained. In a visit which I made in connexion with this subject in 1898 to the native territories I was particularly struck with the focal character of the distribution in those parts where it had not been for a lengthened period endemic. Leprous kraals, separated from each other by wide tracts, were frequently found. On inquiring into the history of such kraals the headsman of the district would not seldom give the information that a relative of the occupier had returned from working in some distant part of the Colony either leprous or after his return had become so, and that some time afterwards other cases made their appearance in the kraal.

The number of those of European descent on the register in 1903 amounted to close on 100 and of these six were born out of the Colony. While the great majority are of Dutch colonial descent, a proportion are of pure British extraction. Up till 1896 there were very few European lepers on Robben Island who were not of Dutch colonial descent, but since then an increasing number of pure British extraction have been admitted, some of them cases of great severity, and, with a few exceptions, these had, before coming to South Africa, visited countries where they might have contracted the disease; the others acquired it in the Colony. Of course, hereditary predisposition was in these cases out of the question, and in some there was an acknowledged history of association with lepers, not, however, amounting to "commensalism." The large preponderance of the European cases I have seen, and this is also borne out by statistics, have been of the nodular or mixed variety. The same variety is also in excess in Norway. Australian statistics also show the proclivity of those of European descent to develop the disease in this severe form. Why it should be so is difficult to say. On the other hand, the pure native, as seen in his own natural habitat, as a rule, develops the disease in the maculo-anæsthetic form and, more than this, many of them take it in a slight form and do not exhibit in its course that cachectic look which is so characteristic of actively progressive leprosy. Some of these natives show only a few insignificant maculæ, with perhaps in addition a contraction of the fingers and slight wasting of the arm muscles, often unilateral; they are frequently, apart from this slight disfigurement, quite healthy-looking and able-bodied. The infectivity of such cases needs very careful consideration and is receiving it at the hands of the responsible officials. Bad cases of nodular or mixed leprosy are of course met with among the natives and are apt to be very severe indeed. But, as I have said, the proportion affected in this way is comparatively very small. It has also seemed to me that leprosy tends to run a less severe and a modified course in the high and dry inland regions of the country and that the proportion of nodular cases increases with propinquity to the coast line. I have already mentioned a racial predisposition to a certain form of clinical affection in the disease and now it would seem that climate is not without some modifying effect.

Many of the maculo-anæsthetic cases are extremely prone to the attack of tuberculosis, and particularly so when confined in institutions, and a very large proportion of the annual leper death rate is due to tuberculosis killing off such cases. The nodular form seems much less susceptible to tuberculosis and it is difficult to find a satisfactory explanation of this unless it is due to the condition of general leucocytosis which is so prominent a feature in nodular leprosy. Indeed, but for the dying off of the patients from tuberculosis the accumulation of the affected would be very much greater than it is. In the mixed races the preponderance of the maculo-anæsthetic over the nodular cases is not so great, but the excess is nevertheless very considerable.

In most other respects the clinical history of affected persons in this country presents no difference whatever from what occurs in leprosy all the world over. It has the same insidious beginning, the same lack of definite information exists as to the time and source of infection. Considering that we know practically nothing about the incubation period of leprosy this uncertainty is not surprising; it applies, though in a less degree, to the sources of infection in individual cases of tuberculosis. The cases which one usually sees in asylums are comparatively old cases even on admission. I have examined close on 2000 cases on Robben Island, Emjanyana, the native territories, and various parts of the country, but I do not recall among them one who could with certainty be said to have been affected for a less period than 18 months, and the vast majority were much older. By the time a case becomes suspiciously recognisable it is by no means of very recent origin. The period of incubation of an infective disease is usually and properly

defined as extending from the effective opportunity of communication till the first characteristic symptom of invasion appears but of this period in leprosy nothing is with certainty known. What is incorrectly spoken of as the incubation period is the long period during which the disease gives rise to no symptoms or appearances which excite suspicion in the minds of the patient or his friends. Significant prodromata are also in my experience very unusual in the vast majority of cases. On looking back the patient usually and pardonably mistakes some intercurrent indisposition for an initial symptom of invasion. The so-called leprotic fever is usually merely the lighting up of pre-existent leprous foci in the body by the dilatation of terminal vessels during the course of some intercurrent febrile attack.

Everything, indeed, tends to make it probable that the disease begins (how long after the implantation of the bacilli cannot at present with certainty be known) as a small collection of round cells under the mucosa of some part of the nasal cavity. Some of these round cells which are derived both from leucocytes and from the proliferation of connective tissue corpuscles, implanted bacilli, of course, being the starting point of the protective collection, contain bacilli which pursue some part, at any rate, of their life history in their interior. These bacilli-containing cells may continue anchored at the spot or may make their way into the capillary or lymphatic circulation. Their dissemination to distant organs seems to be mainly by the blood stream, and they do not with ease pass along the fine lymphatic channels. The comparatively slight implication of the lymphatic gland in this disease is an evidence of the latter statement. Those cells carried away by the blood stream come to anchor in situations where there is a tendency to intermittent stasis or slowing, physiological or anatomical, as the case may be, in the fine capillary circulation, and at such situations the process is repeated. Organs or systems where there is a rapid, free, and continuous current of blood are thus, as we might expect, practically immune from the leprotic granulomas; notably, accordingly, are the lungs, the brain, and the spinal cord free from attack; and just as we have in leucocythæmic conditions an infiltration and enlargement of the liver and spleen, so we have such in leprosy by bacilli-containing leucocytes. The increase in size of these organs may be enormous, while the enlargement of lymphatic glands is slight or practically not noticeable. It is surprising, considering the enormous changes in the spleen and liver in nodular leprosy, that the condition of these organs has not attracted more general attention in the literature of the subject. Thin sections of the liver in early nodular leprosy afford the best material for studying the essential pathology of the disease. The whole process is one of obstruction by accumulating foci; the bacilli are not destroyed in the attacking cells, nor do they secrete a toxin sufficiently powerful to cause necrosis of the enveloping protoplasm, so that localised accumulations of bacilli-containing cells take place which, by obstruction and pressure, cause all the symptoms; the process is naturally an exceedingly slow one and subject to periods of regression and quiescence and it is this benign character of the bacillus lepræ which paradoxically explains the chronic intractable nature of the disease and the dreaded deformities. Further research is necessary to elucidate the remarkable selective nature of the lesions in maculo-anæsthetic leprosy, but it is certain that the neuritis is of pressure, not of toxic origin. Were the latter the case the axis-cylinder destruction in nodular leprosy with its enormous accumulation of bacilli would be widespread. But the characteristic absence of coagulative necrosis in itself proves the absence of toxin. In my own hands the injection of concentrated extracts of tissues containing packed infiltration of bacilli produced no appreciable effect on animals.

Though the implication of the nasal region in leprosy has long been known it is only recently that its bearing on the mode of communication of the disease has been suspected. In a nodular case of moderate severity the nasal mucous membrane can be seen studded with ulcerating patches of varying size; besides these, tiny whitish specks can be noticed under the membrane which on microscopic examination may be seen to consist of minute collections of round cells surrounding and containing masses of bacilli. It is not unusual to regard these as the earliest stage of the leprotic process and that it is from such a particular minute focus that the disease first begins its spread. The cicatrices of small ulcers which have healed can also be observed. One of the earliest signs of nodular leprosy is a slight erythema of the skin about the root of the nose and eyebrows, sometimes extending to the malar regions, and even with these slight signs extensive ulceration of the nasal mucous membrane may be found with abundant bacilli practically in almost a pure culture.

Questioning the more intelligent patients I have frequently found that they had very early noticed nasal obstruction as preceding the symptoms of disease which first caused them anxiety, though naturally they did not recognise the significance of this till it was pointed out to them. I examined the nasal secretion in more than 300 cases and in practically all the nodular and mixed cases bacilli were found more or less abundantly and in some of these they were in enormous quantities. Early cases also showed bacilli from small nasal ulcers when there was no ulceration on any other part of mucous membranes or on the skin. In nearly 10 per cent. of the early maculo-anæsthetic cases I found bacilli in the nasal secretion and this preponderance in the early maculo-anæsthetic cases seemed to me significant. A few of the latter cases afterwards showed signs of becoming mixed cases but this was decidedly in my experience an uncommon course. That bacilli seemed to be more commonly found in the nasal secretion of the earlier maculo-anæsthetic cases suggested a disappearance of nasal ulceration in the old-standing cases of this type, so that it would seem reasonable to infer that in such cases the nerve lesions are secondary to the nasal focus, and are originated from bacilli which have migrated from it through the medium of the vascular current. The original nasal focus had healed and disappeared, leaving the skin and nerve lesions as permanent effects but which are really of a secondary and pathologically subordinate character. In a sense the original nasal ulcer would correspond to the primary hard syphilitic sore, which disappears to be followed after a period by secondary symptoms. I offer this not as a case of pathological parallelism but as a suggestive analogy. Why the bacilli or the bacilli-carrying cells should select the very specialised sites they do in certain peripheral nerves needs further elucidation, but we may feel fairly confident that the reason is not physiological but anatomical and that vascular entanglement is its basis. In the mixed and nodular varieties the pathological process is a far more active one; there is a more vigorous general reaction of the tissues, as shown by the general leucocytosis and the condition of the liver and spleen. The leucocytosis, however, defeats its own object because it spreads the bacilli by means of bacilli-carrying cells in whose substance the bacilli retain their vitality. While clearly seeing the weak points in the above explanation of the two varieties of leprosy my experience of the disease leads me to regard it favourably.

Granting the above premisses, it is quite possible that in some individuals the nasal ulceration may be small and transitory and that no secondary lesions may occur or of very trifling nature. I have seen cases of an undoubtedly maculo-anæsthetic nature when there were only two or three small maculæ on the body with a very slight contraction of the fifth and fourth digits of one hand and the whole process stationary over some years. A lesser degree of involvement would escape notice, and some of the cases I refer to would certainly have done so but for the reason that they were convicts and therefore had been subjected to a rigid medical scrutiny. In some there were no bacilli in the nasal secretions—at least, none were found after a careful search. It is therefore quite possible that there may exist unrecognised cases where the disease consists practically of slight nasal ulceration alone. Yet such cases may at one period be sources of infection.

From what we know of the variation of virulence in pathogenic bacteria in some diseases it is also quite possible that the virulence of the bacillus lepræ may diminish in infective potency as time goes on while its power of growth in the body is retained. These cases may be most infective at the very earliest stage of nasal ulceration when the outward symptoms are least apparent, and certainly some of the histories of patients who were in contact with early slight cases lend some colour to this supposition. Certainly great difficulties surround the actual circumstances of the communication of the disease from individuals. The fact that it seems almost impossible to inoculate animals with the disease shows that there is some very special relation between seed and soil. Of course, I am aware that some local growth has been produced by implantation in monkeys and other animals but this is a very

different thing from producing the disease. I have seen various animals living for long periods in commensal relations with patients, such as dogs, cats, rats, mice, fowls, and birds of various kinds, but though carefully looked for no symptoms of the disease were noticed. One cat and two mice showed signs of nasal ulceration but microscopic examination showed no bacilli and in the case of one of the mice the condition was epitheliomatous, so that the other two instances were probably the result of trauma. The theory that the disease is conveyed through an intermediate host is certainly an enticing one but at present it lacks any supporting evidence whatever. Fleas, bugs, acari, and other skin parasites have been suggested as likely go-betweens but proof is still to seek. If, on the other hand, the nasal mucous membrane is the primary seat of infection, the intermediate host theory must go by the board. The means by which implantation can take place on the mucous membrane can be easily understood.

During the many years Robben Island has been occupied as an asylum only two cases of communication have, so far as I am aware, been recorded on good evidence, and I have not heard of any at Emjanyana. In this negative respect the South African asylums are very much at one with similar institutions in other parts of the world. Still, there are few such asylums where some recorded cases of communication do not exist. Where the association of individuals is that of daily social domestic intercourse the cases of communication recorded become enormously increased, as is the case in consumption.

My experience of the treatment of the disease has been much on a par with that of most others. The serum treatment, of course, had a good trial as we were liberally supplied with "anti-leprotic" serum from Bogota, prepared by Dr. Carrasquilla; also serum prepared by Dr. Herman from Dr. P. S Abraham's laboratory in London, while we made ourselves a considerable amount of serum from the blood of arrested cases of leprosy. We used control experiments with various animal sera, an account of which will be found in the Proceedings of the Leprosy Congress in Berlin, 1897. The results were quite negative. Indeed, it is difficult to see how a bacillus the toxicity of which is so slight can be inhibited by serum treatment. Extracts were made by us of enormous quantities of bacilli and these injected into rabbits produced no toxic symptoms whatever. Treatment by anti-leprotic sera, therefore, may practically be considered out of court in this disease. The whole pathology is essentially different from that of the acute affections where antitoxic sera are of value.

It would take up too much time to describe my experiences of treatment by different drugs, but I may say at once that I experienced very much better results with chaulmoogra oil than with any other, and there is such a general consensus of confirmatory evidence from many quarters that there can be no doubt of the distinct value of some constituent of this substance in leprosy. I say some constituent, for the oil is a highly complex body and its pharmacology is as yet far from worked out and it is probable that as now supplied its composition is by no means uniform. An approximate analysis gives gynocardic acid 12 per cent., palmitic acid 64 per cent., hypogæic acid 4 per cent., and coccinic acid 3 per cent., in combination with glyceryl as fats, but the first two are present in the free state as well. Long ago it was noted by Dr. Young of Florence that in treating leprosy with this substance bronchial affections were markedly benefited and this was also my experience. No doubt the gynocardic acid has a good deal to do with this but some of the other constituents have a distinct and unmistakeable effect on the nutrition of the skin and the mucous membranes. Cases using the oil systematically never needed tracheotomy for the relief of laryngeal symptoms and a marked fall in pulmonary complications followed its general use; there was a greatly improved appearance of the cuticle generally and it undoubtedly promoted comfort or prolonged life. This was recognised by the more intelligent patients. The results were up to a certain point in my opinion striking. 120 minims three times a day after food can in time be easily borne for long periods, diluted with equal parts of olive oil, or the same quantity can be given in capsules. The changes can be rung by hypodermic injections. As much as ten cubic centimetres of the pure oil diluted with equal parts of olive oil injected into the loose areolar tissue of the back can be borne three times a week without much inconvenience. It is rapidly absorbed and out of many hundreds of such injections I have not seen one followed by abscess or by unpleasant respiratory symptoms. Accompanying this treatment inunction of the oil, antiseptic lavage of the nasal cavities, and prolonged warm baths make unmistakeable amelioration in the patient's condition. Those who are interested in the subject I would refer to a short paper I wrote in the *South African Medical Record* in 1903, where they will find the whole question discussed in some detail. The results with a substance like chaulmoogra oil are such as to lead us reasonably to hope that a medicinal agent will one day be discovered which will act even more powerfully in leprosy and that its action will be reinforced by means which will raise the general opsonic powers of the blood serum. Indeed, the researches of Wright lead us confidently to anticipate that the latter means of attack on chronic bacterial disease may be definitely developed. Still there can be no doubt that the parasitism of the bacillus lepræ presents problems peculiarly its own. It is the benign character of this bacillus, its non-toxic properties, and the fact that to some extent, at any rate, it can withstand the enzymic action of the white corpuscle which cause the whole chronicity of the process, an example of the law which has been well enunciated by Theobald Smith that the more parasitic a pathogenic organism becomes the less actively aggressive it is and the more it attempts to establish itself by purely defensive measures. It is the defences which surround it which cause the clinical symptoms of the disease in leprosy. Break these down and the solution of the problem will not be far off.

The utility of x ray treatment is more than doubtful and if any of the favourable results which have been recorded are at all dependent on the dermatitis caused, the outlook is not hopeful in this direction. Erysipelas causes an acute and severe dermatitis in the cases of leprosy which it attacks. I have seen many such cases after repeated erysipelatoid attacks which certainly caused temporary improvement, relapse into their former condition. The weakened innervation of the skin in nodular leprosy makes the subject specially prone to the attack of the streptococcus erysipelatos and outbreaks can only be prevented by the most thorough attention to the sanitary condition of wards and buildings.

Till, therefore, we can obtain further light on the pathology and treatment of leprosy it must be combated chiefly by segregation and isolation, making the hardships unavoidable in such a procedure as tolerable as possible. When we remember that the great bulk of the patients in Cape Colony are of the coloured and native races it is evident that this isolation can hardly be arranged on the voluntary Norwegian system, and it must be recognised that in all the circumstances the Government of the colony is doing its best in the interests of the community and the patients to tackle a perplexing problem. It might be supposed that a great deal could be done to reduce the number of those segregated and thus to infuse the afflicted community with some comforting hope as to their future prospects by the discharge of cases when the disease had ceased to be infective. There can be no doubt whatever that this occurs in a large number of the maculo-anæsthetic cases. The ulcers and deformities in the old-standing cases of this class are undoubtedly trophic and are caused by the defective innervation of the tissues. Though bacilli can be found in the nerves of very old-standing cases of this nature they are in all probability dead and in any case they are so anatomically entangled that no danger need be feared. The fact is that these cases have long passed the infective stage of nasal ulceration and, strictly speaking, can no longer be considered a source of communication. This, I think, must be freely granted and, indeed, in fairness insisted on. A very few of the nodular cases become arrested. But when we come to consider the discharge of such cases we meet the disappointing fact that a very large number are permanently incapacitated from earning a livelihood, and if not confined in an asylum as certified lepers would have to be supported by the State as chronic sick paupers. The experiment has been tried here on a small scale in a specially selected class of such arrested non-infective cases and the results are not very encouraging. Promising cases have been sent back to our asylum with a renewal of their trophic ulcerations or deformities, so that they attracted attention and consequently could not obtain employment. Thus, there exists a very large number of cases who must certainly be

considered non-infective to whom it would be showing no kindness to discharge, and who if discharged would soon drift back again to the asylum by stress of circumstances or succumb to poverty or starvation. Even if such cases could count on their relatives for support the state of popular feeling is not favourable, and their charitable relatives would in many cases be involved in the social ostracism. A very few are not so incapacitated as to be unable again to take their place in the social environment they previously occupied, and every effort is being made to sift out and discharge under conditions which admit of their subsequent surveillance these hopeful cases.

In the light of our present knowledge it is difficult to see what more can be done except to deal as generously as they deserve with those unfortunate people who, in the full possession of their faculties and for no moral offence, are isolated practically for life for the general good. It is certainly doing these people no kindness to suggest to them that they are being dealt with unjustly and ignorantly in the name of science. Such statements have recently been spread broadcast by a regular newspaper propaganda carried on—with the very best intentions no doubt—by Mr. Jonathan Hutchinson and have been the occasion of great discontent and unrest among the unfortunate sufferers and anxiety to the authorities. But in all the circumstances it certainly would seem that a more sustained and continuous effort should be made on behalf of those people in the way of experimental and scientific research in our well-organised asylums which are so suitable for a considered plan. It is almost useless to appoint men, however well qualified, with a roving commission, so to speak, to make discoveries in so wide a field as that of leprosy. The effort should be made in conjunction with a scientific organisation such as one of our flourishing schools of tropical medicine. In coöperation with the Government these schools might periodically send out to our asylums a research scholar or scholars who would under the direction of the scientific staff of the school have a definite objective mapped out for them to attain, if possible, during the period of the research. In the light of my experience some such plan—modifications will easily suggest themselves—is the only way in which we may expect systematised results of practical and scientific value, and I would humbly suggest its consideration to the distinguished medical scientists who are now here to afford us the helpful advice they are so competent to give; indeed, to be helpful in this way is, I take it, one of the principal objects of the British Association in its visits to different parts of the Empire. That the disease can be entirely eradicated no one can for a moment doubt; that inquiry into it and practical efforts for its suppression are not carried on with desirable vigour is certain. Its continued extension in a civilised community can be nowadays regarded in no other light than a stigma. Let us hope that this condition of things may ere long be altered and that by the end of the present century, so far as South Africa is concerned, leprosy may be reckoned among "the poor unhappy far-off days and things of long ago."

Cape Colony.

## A CASE OF ACUTE MENINGOCOCCAL SEPTICÆMIA.

BY F. W. ANDREWES, M.D. OXON., F.R.C.P. LOND., D.P.H. CANTAB,

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IT is well known that cerebro-spinal fever is often accompanied by cutaneous hæmorrhages. But it is a rare thing for meningococcal infection to be recognised as the cause of a fulminant purpura apart from outbreaks of cerebro-spinal fever. The following case is thus of unusual interest.

The victim was a medical man, 53 years of age, in practice in the City. He was in his usual good health on Feb. 10th and sat up all night with a patient under his care. There had been no contact, so far as is known, with any case of meningococcal infection and no case of cerebro-spinal fever is known to have occurred elsewhere at the time in the City of London. On the following day he seemed quite well; he ate his dinner as usual in the evening and smoked a cigar afterwards, conversing with his friends. It is said that he had a little shivering and malaise that night but on the morning of the 12th he felt ill and did not get up, though he did not think it worth while to send for a medical man. Towards midday he was worse and the appearance of spots on the face caused those who saw him to call in Mr. Alfred Chune Fletcher. Mr. Fletcher called in Dr. Samuel West in consultation and in the course of the afternoon the patient was removed to St. Bartholomew's Hospital under Dr. West's care, being placed in an isolation ward as it was not clear from what infection he was suffering. I am indebted to Dr. West for permission to publish the details of the case.

When I saw the patient about 5.20 P.M. he was in a moribund condition, with a profuse hæmorrhagic purpura from head to foot. The temperature was 99·4° F. and the respirations were 34 per minute; the pulse was not perceptible at the wrist. He was practically unconscious but could be roused to open the eyes which, indeed, he did but a few minutes before his death soon after 6 P.M. There were no evidently meningeal symptoms and death occurred suddenly at the end.

It was evident that the condition was one of a profound septicæmia and steps were taken to ascertain its nature. Dr. J. H. Thursfield prepared a syringe and withdrew blood from the basilic vein less than half an hour before death. At the same time I prepared films of the blood and carried out a leucocyte count. The case was so manifestly a hopeless one that all that could be expected was the melancholy satisfaction of establishing the diagnosis.

The results of the blood examination were as follows. The blood drawn from the finger, which was much cyanosed, was dark and viscid. It showed 12,800 leucocytes per cubic millimetre (the mean of two separate estimations by Dr. Thursfield and myself); 320 nucleated reds (normoblasts) were present per cubic millimetre. The differential count gave: lymphocytes, 23 per cent., 2944 per cubic millimetre; polynuclears, 68 per cent., 8704 per cubic millimetre; neutrophile myelocytes, 5 per cent., 640 per cubic millimetre; large mononuclears, 2·5 per cent., 320 per cubic millimetre; and eosinophiles, 1·5 per cent., 192 per cubic millimetre. There was thus a trivial polynuclear leucocytosis, with the myelocytes and normoblasts commonly seen in very grave infections. The most interesting feature of the films lay in the presence of large cocci, which were *exclusively intracellular*, being inclosed in pairs or groups of half a dozen, rarely more, in the polynuclear leucocytes. In one myelocyte some were seen. No single free coccus was seen in the blood. The idea that these were the meningococcus was not entertained till the result of the cultures was known but it is of interest to note in a septicæmia the same intracellular disposition of the cocci so familiar in the meningeal affection. The blood withdrawn from the basilic vein was distributed in broth tubes and over agar-agar. Some were incubated anaerobically but these yielded no growth. The aerobic ones yielded a pure and abundant growth of a large coccus, forming whitish semi-translucent colonies and negative to Gram's stain. Subcultures on gelatin at 20° C. yielded no growth at all but on nutrose ascitic agar, on ordinary agar, and in ascitic bouillon subcultures grew vigorously. Two guinea-pigs were inoculated on Feb. 13th with one of the original cultures from the blood, the one subcutaneously, the other intraperitoneally. No effect was produced by the subcutaneous inoculation; the animal remained in good health with scarcely any local reaction. The animal inoculated intraperitoneally was found dead in less than 24 hours; there was no very evident peritonitis but the coccus was recovered in pure culture not only from the peritoneum but abundantly from the heart's blood. The animal had died from an acute septicæmia unattended by any hæmorrhages.

At the post-mortem examination of the patient, performed the day after death by Dr. W. Langdon Brown, the appearances were as follows. In addition to profuse cutaneous hæmorrhages large hæmorrhagic patches were distributed along the mucosa of the intestine. Both suprarenals were in an intensely hæmorrhagic condition, dark purple in colour, swollen, and contrasting strongly with the kidneys, which were but slightly congested. The spleen was quite small and not in any way engorged or dark. There were extensive subarachnoid hæmorrhages, especially over the front and base of the frontal lobes of the brain, but there was no appearance of meningitis, nor on subsequent microscopic examination of the meninges could any evidence of actual meningitis be detected. The extravasated meningeal blood yielded, however, a more profuse growth of the coccus on culture than did blood withdrawn from the heart. The

patient must thus be said to have died from an acute hæmorrhagic septicæmia without evidence of meningitis.

It remains to discuss the evidence as to the nature of the coccus. Few Gram-negative cocci are known to be pathogenic for man; the only ones with which I am acquainted are micrococcus catarrhalis, the gonococcus, and the meningococcus. As regards the first two, I know of no recorded case in which they have been proved to cause an acute hæmorrhagic septicæmia such as is known to occur in certain cases of cerebro-spinal fever. The gonococcus could here also be excluded by the characters of the growth on culture media and micrococcus catarrhalis with almost equal certainty. With the help of Dr. M. H. Gordon I tested the organism as regards its metabolic powers on a series of some 18 carbohydrates, glucosides, and alcohols, adding to the culture media a little sterile raw ascitic fluid. An acid reaction was produced with glucose, levulose, galactose, maltose, and dextrin, while mannose, saccharose, lactose, glycerine, mannite, and the other substances tested remained alkaline. These reactions correspond in every detail with those of the meningococcus isolated from cases of posterior basic meningitis. The coccus further corresponded in every respect with that organism in its form, size, staining reactions, cultural characters, and pathogenic effects upon the guinea-pig. I therefore feel justified in asserting that it was the classical meningococcus—the diplococcus intracellularis meningitidis of Weichselbaum.

I have ventured to give the details of this case at length because I regard it as one of considerable importance. There is a large body of evidence to show that the infecting agent in epidemic cerebro-spinal fever is the meningococcus and it is known that in this disease hæmorrhages are common and that in severe and fulminant cases they may form the striking feature—that, in fact, there are acute septicæmic cases of the disease, fatal before the typical meningeal symptoms have had time to develop. It is equally well known that a common sporadic form of meningitis in children, not necessarily fatal and associated with a special localisation about the posterior fossa of the base of the brain, is to be traced to an organism indistinguishable from the meningococcus. Many have doubted that two diseases, so different in their clinical course and in their distribution, could be due to one and the same organism. Yet here is a case which can be paralleled only by the most fulminant type of epidemic cerebro-spinal fever occurring in a purely sporadic manner with no known connexion with any epidemic of the disease, which I have shown, as I trust, to be due to infection by a micro-organism in every respect identical with that of our ordinary posterior basic meningitis. Acute hæmorrhagic purpura may apparently depend upon a number of different infections and I know not how often the meningococcus may be included amongst them. I offer this case, by the courtesy of Dr. West, as one in which the record is fairly complete.

Pathological Laboratory, St. Bartholomew's Hospital, E.C.

## VOLVULUS OF THE CÆCUM TREATED BY REDUCTION AND APPENDICOSTOMY,

### WITH REMARKS UPON THE OPERATION OF APPENDICOSTOMY.[1]

BY R. CHARLES B. MAUNSELL, M.B. DUB., F.R.C.S. IREL.,

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THIS communication is of interest, first, because in it is recorded an example of a rare form of intestinal obstruction; and, secondly, because the line of treatment adopted is novel and gives an opportunity, for the first time in Ireland, of discussing a very simple operation which, in my opinion, has a very useful future.

The patient, a married woman, aged 77 years, with a large family, was admitted to Mercer's Hospital, Dublin, on Jan. 12th last. She was a very brown-skinned, wiry-looking old woman who stated that up to 6.30 P.M. on Jan. 11th she had practically never been ill but that she had always been subject to obstinate constipation. On that evening, whilst at tea with her family, she was suddenly seized with violent pain in the umbilical region and her abdomen became swollen and hard within a few minutes. On the next morning she was seen by Dr. H. Knapp, who administered an enema without result and advised her to go to hospital. This advice was not acted upon until the evening. When I saw her her temperature was normal, her pulse was 120, and she seemed weak after her journey to hospital but said that her pain was less. Examination of the abdomen revealed fulness below the umbilicus, rather more marked on the right side. The muscles were not very rigid but there was distinct tenderness over the distended area. Vaginal and rectal examination gave no further information. A turpentine enema was ordered but the result was again negative; however, as the pulse-rate was distinctly falling we decided to allow the patient to rest before deciding upon operation. On the next morning she felt rather better and the pulse-rate had fallen to 92. During the day it again rose to 108, so I decided to operate. At no time had there been any vomiting. When the abdomen was opened a tensely distended cæcum and ascending colon were seen filling the lower abdomen and pelvis. These were deflated and withdrawn, when it was found that the cæcum and portion of the ascending colon had made a complete turn from below upwards and from right to left. The lower portion of the ileum having been carried in front of the colon was tightly wound around the neck of the strangulated large intestine. The twist having been reduced it was found that the cæcum and colon had a well-formed mesentery, thus rendering volvulus a possible and likely accident. Having closed the incision which had been made for deflation I determined to fix and to drain the cæcum by performing the operation of appendicostomy. In this instance I had to ligate and to divide a portion of the meso-appendix, but took care to leave sufficient blood-supply to the portion near the cæcum. A stab wound was made at the outer border of the rectus and the appendix was drawn through and fixed by two sutures, its distal end was amputated, and its lumen was dilated with sinus forceps. A gum elastic catheter was then passed through it into the cæcum and fixed in position by an encircling ligature. The after-history of the case was uneventful except for some slight suppuration which occurred in the abdominal wound about eight days after operation, evidently due to infection of the incision when the intestine had been opened for deflation.

The after-history of the appendicostomy is of interest. The catheter was left in position for four days, when the bowels were well cleared out by castor oil. From the first a small quantity of fluid fæces and a large quantity of intestinal gas escaped through the catheter, thus keeping the intestines free from gaseous distension and rendering the patient's convalescence most satisfactory. As soon as the appendicostomy had completed its mission it became necessary, or at least advisable, to close the little opening. Up to the present operators who have performed appendicostomy have considered it necessary to open the abdomen and formally to excise the stump of appendix from the cæcum. It occurred to me that this was an unnecessarily severe sequel to such a trivial operation and that simple excision or invagination of the mucous lining of the stump of appendix should suffice as the muscular tube which would be left would soon cicatrise. I found that it was extremely easy to excise the mucous lining by means of a dissecting forceps and a tenotomy knife, the muscular tube healing soundly within a few days.

On March 20th last I again made use of the appendix in this manner in the treatment of a girl, aged 11 years, from whom I had to remove some four feet of small intestine for acute strangulation by an omental band. The chances of the little patient were practically hopeless from the start, but although the event was fatal yet the appendicostomy opening worked well and prevented abdominal distension.

I have determined to give this operation a very thorough trial as a preventive of distension in emergency intestinal resections or in operations for diffuse or general peritonitis. Up to the present I have sometimes used Paul's glass tube in such, but now I am of opinion that we have found a simpler and equally effective method of preventing ileus. Beyond recording the facts as stated above I have little left to say, as the ground has been taken from under me by Mr. C. R. B. Keetley who has ably dealt with this subject in the *British Medical Journal* of Oct. 7th, 1905, and by Sir William H. Bennett in THE LANCET of Feb. 17th, 1906, p. 419. I may nevertheless mention the indications which these surgeons

[1] A paper read before the Surgical Section of the Royal Academy of Medicine in Ireland on March 23rd, 06.

enumerate and bring this communication to a close with my own appreciation of this attempt to turn the appendix from its evil ways and to make it a useful member of the community of abdominal viscera. Mr. Keetley has collected all the records of this operation, from R. F. Weir's pioneer case down to the date of his communication, and suggests the following as indications: 1. Mucous colitis. 2. Dysentery. 3. Chronic ulceration of the colon. 4. Chronic constipation. In these conditions the opening is used for lavage and medication. 5. To fix and to drain an ileo-cæcal intussusception. 6. To drain and to prevent distension subsequent to operations for intestinal obstruction or when intestinal resection has been performed. In these instances it is used as a prophylactic measure. Sir William Bennett enlarges this list by including the following suggestions: (1) as a method of applying local treatment in complicated enteric fever, as suggested by Dr. W. Ewart; (2) as an improvement upon rectal feeding; and (3) as a substitute for gastrostomy or jejunostomy in very weak and emaciated patients.

I most heartily concur with all these suggestions and have here recorded the further indication of fixation of a volvulus of the cæcum and suggest that it should also receive an exhaustive trial as an aid in the treatment of diffuse or general peritonitis, arising from any cause, when a paretic condition of the intestines is present.

Dublin.

# Clinical Notes:

## MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

### THREE CASES ILLUSTRATING OBSTRUCTION OF THE SUBMAXILLARY DUCT.

BY O. EICHHOLZ, M.D. OXON.

I HAVE within the last eight years observed three cases of affection of the submaxillary gland or duct of a mild character and the simplicity of the treatment is the chief feature that warrants publication. They were all different varieties, moreover. I do not know how frequently such cases occur in the practice of other medical men and a perusal of English and foreign text-books throws no light on this point. Two of my cases concerned the salivary duct of Wharton and in the third case this duct was apparently unaffected.

In the first case the symptoms came on suddenly and I am able to give the symptoms with absolute certainty and precision. There was a feeling of irritation in the floor of the mouth on the side affected and a feeling of tension along the line of Wharton's duct supervened with remarkable suddenness. The swelling of the gland was slight. On examination a few minutes afterwards the orifice of the duct was seen to be blocked by a pale yellowish mass about one millimetre in diameter. There was no difficulty in expressing it and on examination it proved to be of the consistence of putty and malodorous. The same symptoms occurred about a year afterwards and the same treatment was adopted. No recurrence has taken place since (eight years ago).

In the second case the patient found a swelling appearing suddenly in the position of the submaxillary gland externally one evening in December, 1904. I saw him on the following evening, the swelling being still present. It was distinctly tender and was said to become larger while eating. On questioning him he admitted feeling some discomfort under the tongue, as if there were a hair irritating the mouth. There was no difficulty in seeing that a hair was protruding from the papilla of Wharton's duct and it was readily extracted by the fingers, with the aid of a pocket handkerchief to obtain a firmer hold. The hair was about three-quarters of an inch long and the portion embedded in the duct was seen to be encrusted with hard mineral matter. In this case, there was therefore a salivary calculus which had formed round a hair of the moustache which had penetrated the orifice of Wharton's duct and passed along it to the extent of about half an inch. I advised the patient to avoid biting his moustache and no further recurrence has taken place up to the present.

In my third case the only symptom was swelling and some tenderness of the submaxillary gland in a boy, aged 14 years. The sudden appearance of the swelling pointed to some blocking of the duct of the gland but examination of the floor of the mouth did not reveal its nature and I therefore came to the conclusion that the obstruction was situated in the substance of the gland. The treatment adopted was to paint the skin with glycerine of belladonna and apply a fomentation. The swelling and discomfort disappeared by adopting these measures as quickly as they had appeared, the whole episode occupying under three days, and no recurrence has taken place. It is nearly two years since the above occurred.

There must be some doubt as to the precise cause of the swelling in this case as no plug or calculus appeared. It is possible that the obstruction may have been extruded spontaneously; according to Bergmann[1] a stone may suddenly make its appearance in the mouth, as during a meal, without having manifested its presence before, but such an event is said to be exceptional, whereas according to Da Costa[2] small concretions are often passed. It is of course possible that the blockage was the result of inflammation. The diagnosis of such cases as I have here recorded ought to present no difficulty. The sudden swelling of the salivary gland with the possible occurrence of a stone, foreign body, or plug of inspissated mucus or caseous-looking material in the duct are quite characteristic, while the almost immediate subsidence of the tumour when the obstruction is removed (as in my two earlier cases) allays the not inconsiderable alarm which these trivial affections cause the patient to feel.

Russell-road, W.

### A CASE OF COMPLETE "SPONTANEOUS INVERSION" OF THE UTERUS.

BY G. S. MCKAY, M.B. ABERD.

ON Jan. 29th, 1906, I was called to a primipara the first two stages of whose labour were normal, but about 15 minutes after the birth of the child the patient with a strain expelled the placenta adhering to what appeared at first sight to be a tumour. A sulcus demarcated the point of attachment of the placenta to this mass. No fundus uteri could be felt in the abdomen but the hollow in its place was quite palpable. Having the following data—namely, (1) a distinct hollow in the abdomen in the place of the fundus uteri; and (2) a mass outside the vagina—I came to the conclusion that the case must be one of inverted uterus. The hæmorrhage being now very profuse I seized the neck of the inverted uterus, which lay outside the vagina, and by gentle pressure between the thumb and forefinger of the left hand the bleeding was controlled until I detached the adherent placenta with the right hand. The uterus was reinverted by pressure and counter-pressure between the two hands and slipped into its proper position not unlike the reinversion of a collapsed indiarubber ball. As the interior of the uterus might have undergone septic contamination from extraneous sources I washed it out with antiseptic lotion. The uterus soon contracted to the size of a cricket ball, firm and hard. The patient complained of little beyond a peculiar faintness until two hours after the reinversion, when she became very pallid and lost consciousness. She remained unconscious for a short time and had two such attacks during the day. After careful watching and guarding of the uterus, injections of salt solution, hypodermic injections of strychnine and ergot, and general treatment for hæmorrhage, the pulse, which was at first rapid and thready, gradually improved. During the next nine days the patient's temperature never exceeded 99·2° F. She made a good but slow recovery and is now quite well. She does not complain of any dragging abdominal pain and feels quite comfortable.

Wetherby.

[1] System of Practical Surgery.
[2] Modern Surgery.

# A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

## RADCLIFFE INFIRMARY, OXFORD.

### A CASE OF PICRIC ACID POISONING, FOLLOWED BY SEVERE CONSTITUTIONAL SYMPTOMS.

(Under the care of Mr. E. C. BEVERS.)

FOR the notes of the case we are indebted to Dr. E. J. Elliot, house physician.

A girl, aged 14 years, was admitted to the Radcliffe Infirmary, under the care of Mr. E. C. Bevers, on Sept. 27th, 1905, having been scalded by boiling water. On examination both elbows and a considerable area of the arms above and below were found to be burnt. There were also slight burns on the forehead, round the right ear, and at the back of the neck. The burns of the arms were partly of the second and partly of the third degree; that of the face was of the second degree. Extensive blebs had formed over all the areas. The blebs were pricked and the wounds were dressed every second day with a saturated solution of picric acid.

The patient progressed favourably until the morning of Oct. 4th, when she complained of not feeling well. Her tongue was furred, the lips were dry, and the expression was anxious. She was sick on several occasions during the day. Her temperature, previously normal, rose to 102·4° F. and the pulse from 88 to 154. The respirations were 24. The conjunctivæ showed a yellowish tinge, especially towards the outer and inner canthus of the eye, and the whole skin had a slightly icteric tint. A rash was found over most of the body. It was bright red in tint, papular, and non-hæmorrhagic. The papules were partly discrete and partly confluent, the whole having somewhat the appearance of a measles rash. It was distributed in the discrete form over part of the neck, the whole of the chest, the abdomen, and the back, the arms as far as the wrists, the front of the thighs, and a few patches over each ankle and over the toes. It was well marked and confluent over the sides of the chest, both buttocks, the back of the thighs, the calves, and the insides of the knees. There was no rash on the face, the hands, or the front of the legs. The urine passed that morning was acid, with a specific gravity of 1022. It was clear and of a bright red colour, with a greenish shimmer on the surface. The blood was examined and a considerable diminution in the number of red blood cells was found, with some increase of the eosinophile leucocytes. The burns themselves were healing satisfactorily. The dressing was changed to spread boric ointment, as it was suspected that the patient's symptoms were due to the picric dressing. On Oct. 5th the temperature had fallen to 100·1° and the pulse to 130. The patient seemed better but the sickness still continued. The rash was more pronounced and more confluent. The conjunctivæ were a deeper yellow and the urine was of dark orange-brown colour with a large deposit of urates. On the 6th the temperature was 99·1° and the pulse was 96. The rash was beginning to fade. In parts there was evidence of slight hæmorrhages into the papules. The conjunctivæ were not so yellow. The urine was of the same colour. The rash continued to disappear gradually from this date, being invisible by the 12th.

The patient progressed favourably till Oct. 14th, when she was again seized with vomiting and looked ill. She complained of pain in the abdomen which was tender on palpation. The temperature remained normal. The bowels were opened with an enema. There was no blood in the stools or in the vomit. The pain was very severe and one-sixth of a grain of morphine hypodermically was needed to obtain relief. She improved in a day or two and was discharged on Oct. 24th. About four days before leaving the hospital she developed a small petechial rash on the lower part of the legs. The patient remained quite well at home for a week, but on Nov. 1st she felt the pain again in the "stomach" and was sick three times. No blood was noticed in the vomit. On Nov. 3rd she was re-admitted to the Radcliffe Infirmary under Dr. W. Collier. She was obviously extremely ill. There was severe abdominal pain which needed morphine to allay it. During the next three days she showed no improvement. She vomited blood, passed blood in the stools, and the urine was smoky and gave the blood reaction with guaiacum. Only a few petechiæ appeared on the forearms. On Nov. 7th she was a little better and subsequently made a rapid improvement and went home again on the 29th quite well, with the exception of a cloud of albumin in the urine.

*Remarks by* Dr. ELLIOT.—Owing to the extensive use of picric acid as a dressing for burns and to the small number of cases published in which toxic symptoms have been observed it has occurred to me that this case is of sufficient interest to be placed on record. The general aspect of the patient, the vomiting, temperature, rapid pulse, and rash all pointed to some profound constitutional disturbance and it will be noticed that these symptoms only supervened after applying the picric dressing for seven days and ceased on the dressing being discontinued.

The points of interest with regard to the rash were: 1. Its resemblance in many respect to a measles rash; it was absent, however, from the face and behind the ears. 2. It was extremely well marked and confluent in those parts of the body in contact with each other and also where subjected to pressure.

The urine was examined by Dr. W. Ramsden, of the Oxford Physiological Department, whose report was as follows:—"The first sample of ——'s urine (Oct. 4th) was rich with some abnormal pigment. Subsequent samples were abnormal only in the quantity of the normal constituents. The abnormal pigment was carried down with the earthy phosphates precipitated by heat, the precipitate having a rich brown colour. It seemed probable, therefore, that it would turn out to be hæmatoporphyrin. I carefully followed Garrod's instructions for the detection of hæmatoporphyrin in the urine. The result was entirely negative. I have also tested carefully for methæmoglobin and hæmatin and find neither of these substances. Blood pigments and their simple derivatives are therefore absent. What the abnormal pigment is I am unable to determine. The existence of various urinary pigments about which nothing else is known is beyond question. Presumably it is one of these and its identification would require an elaborate research and a much larger quantity of urine than I possess." The examination of the blood and urine, combined with the icteric tint of the skin and conjunctivæ of the patient, would seem to point to a toxic condition in which destruction of blood corpuscles had taken place.

In previous cases which I have been able to find recorded in the medical journals very similar symptoms have been observed—viz., severe constitutional disturbance, rapid pulse, rise of temperature, rash, and yellow tint of conjunctiva and skin. One case showed vomiting and diarrhœa. Another showed all the above symptoms except the rash. In all cases the urine has been described as of a dark red, dark green, or port-wine colour, and in all the symptoms have abated on discontinuation of the dressing. From the occurrence of such symptoms as the above there seems to be reason for believing that the use of the saturated solution of picric acid as a dressing for burns is not without its dangers.

## BEDFORD COUNTY HOSPITAL.

### A CASE OF MOVEABLE LIVER AND VENTRAL HERNIA; HEPATOPEXY AND PLASTIC OPERATION ON THE ABDOMINAL WALL.

(Under the care of Mr. W. GIFFORD NASH.)

A WOMAN, aged 43 years, was admitted to hospital on May 30th, 1903, complaining of abdominal pain, discomfort, and weakness which made her life miserable. She had had eight children and her abdominal wall had bulged since her fifth confinement 11 years previously to admission.

On examination the patient was a thin woman, looking at least ten years older than her age. The uterus prolapsed when she stood up. The liver was displaced downwards, so that its lower edge was on a level with the umbilicus; it was freely moveable and could be pushed up into its normal position. The right kidney was freely moveable.

When lying down the abdominal wall was extremely flaccid and the recti muscles were widely separated, but when the patient raised herself the intestines bulged forwards between the recti, causing a large ventral hernia measuring nine inches vertically by four laterally. There was present a marked condition of enteroptosis. To remedy this condition suture of the liver and repair of the ventral wall were decided upon.

Operation was performed on June 15th. An incision was made in the middle line about nine inches in length, commencing six inches above the umbilicus. The liver was pushed up and kept in place by four buried celluloid thread sutures, small button-hole skin incisions being made for this purpose over the sites of the sutures. The edge of the liver was thinned out and more fibrous and tougher than usual. The ventral bulging was dealt with by excising a large elliptical piece of skin and peritoneum. The wound was closed by suturing in three layers the peritoneum, the rectus sheath and muscle, and the skin.

The patient made an excellent recovery and when seen at the end of 1905 the liver remained fixed in its normal position and the median incision was quite firm. She had immensely improved in condition and health and looked years younger than before operation.

*Remarks by* Mr. GIFFORD NASH.—In THE LANCET of April 7th, 1906, p. 949, Mr. W. Watson Cheyne related two cases of hepatopexy and remarked on the small number of cases of operation recorded in medical literature. Dr. H. D. Rolleston also, in his work on "Diseases of the Liver," p. 35, mentions that Terrier and Auvray collected 15 cases of hepatopexy with 11 cures. Quincke, in the article on Diseases of the Liver in "Nothnagel's Practice," p. 398, suggests excising a wedge-shaped piece of the abdominal wall in the region of the linea alba.

The case I have related above was evidently an example of rotation of the liver on its transverse axis, so that the upper surface was in contact with the anterior abdominal wall. It was part of a general enteroptosis due to loss of muscular tone and stretching of the abdominal wall. The comparatively simple operation produced the most beneficial results.

# Medical Societies.

## LIVERPOOL MEDICAL INSTITUTION.

*Sarcoma of Left Iliac Region.—Early Human Embryos.—Aneurysm of Ascending Aorta.—Villous Tumour.—Spinal Conditions leading to Acute Paraplegia.*

A PATHOLOGICAL meeting of this society was held on April 5th, Mr. F. T. PAUL, the President, being in the chair.

After the exhibition of a large number of card specimens the PRESIDENT showed a patient with a Sarcoma of the Left Iliac Region which had remained stationary for 12 months; a piece had been removed for microscopical examination.

Dr. K. A. GROSSMANN showed Four Early Human Embryos collected for the purpose of embryological examination of the development of the eye. They were of about six, seven, eight, and nine weeks respectively and were all complete in amnion and with one exception in chorion also.

Dr. JOHN HAY showed a specimen of Aneurysm of the Ascending Arch of the Aorta which had ruptured at its posterior portion into the superior vena cava. The rupture caused sudden loss of consciousness and intense cyanosis with distension of the veins of the head and neck, shoulders, arms, and the upper half of the trunk. The patient recovered consciousness shortly after admission to hospital but died in 60 hours.

The PRESIDENT read a note on three cases of Papillomatous Growth, one of widespread villous tumour of the urinary organs, one of villous tumour of the rectum, and one of a large rapidly growing papilloma of the tongue believed to be malignant but ultimately proved to be innocent. Villous tumour of the bladder he believed to be primarily innocent with a marked tendency to become malignant; only favourable cases were permanently cured, some became cancerous, and others seeded themselves over the adjacent mucous membranes. Villous tumour of the rectum was almost invariably carcinoma from the first but being more accessible and less malignant than cancer of the bladder was frequently permanently cured by operation. Papilloma of the tongue was perhaps always innocent primarily but had an inveterate tendency towards malignant change in course of time. In discussing the value of reports by expert pathologists on the nature of new growths, he said that in difficult cases it was frequently impossible to decide, as was constantly done, on microscopical appearances alone; such reports were frequently wrong. It was necessary to consider the clinical and pathological evidence together and he strongly supported the suggestion recently made by Mr. A. W. Mayo Robson that in important cases the pathologist and surgeon should meet in consultation.

Dr. W. B. WARRINGTON gave a short sketch of the Pathological Conditions in the Spinal Cord leading to Acute Paraplegia. This might be due to a primary vascular disturbance, hæmorrhage, thrombosis, embolism, or the cause might be a primary inflammation. Primary hæmorrhage was rare and usually traumatic; it was considered (*a*) as epidural; (*b*) subdural, clinically negligible; (*c*) into the substance of the cord; and (*d*) into a pre-existing cavity—syringal hæmorrhage. A primary thrombosis was considered to be the cause of the usually named "transverse myelitis" and in this condition syphilitic arteritis was the common lesion. Many other forms of local destruction of the cord were also considered to be due to a primary ischæmia; these were tuberculous and syphilitic, meningitis, compression of the cord, and the effect of tumours. Dr. Warrington discussed the pathological appearances presented by acute diseases of the spinal cord, the effects of acute degeneration, softening, hæmorrhagic infarction, coagulation, necrosis, and inflammatory œdema. He alluded to caisson disease as perhaps an example of pure ischæmia from gas embolism. Primary inflammation was, he thought, rare and probably included the disseminated lesions characterised by demonstrably infective causation. A remarkable example of such acute disseminated hæmorrhagic myelitis was mentioned and specimens illustrating its pathology were shown. Dr. F. E. Batten's view of the thrombotic nature of encephalitis and infantile palsy was noted and the relationship of Landry's paralysis to the other acute paraplegias was briefly considered.

*Scabies.—Intratracheal Injection of Izal in Pulmonary Tuberculosis.—Intrathoracic Tumours.—Treatment by Hypnotic Suggestion.*

A meeting of this society was held on April 19th, Mr. F. T. PAUL, the President, being in the chair.

Dr. F. H. BARENDT read a note on Scabies, emphasising certain points in diagnosis, mode of infection, and treatment. In cases where the primary eruption was incapable of detection—cuniculi not being recognisable—but the sites of the secondary eruption due to the pruritus were well defined, the patient should be treated for scabies. The nipple area in woman and the genital region in man should always be carefully examined, especially where the eruption between the fingers, in the case of cleanly individuals, was absent. Dr. Barendt drew attention to the method of distribution, which thus accounted for the universality of the lesions in long-standing scabies. He considered that infection was almost always nocturnal and the result of prolonged contact with an infected person and that the handling of bed- or body-clothes or shaking hands with a scabetic could communicate scabies was, to say the least, not proven. In ascertaining the source of infection it was necessary to question the patient upon his surroundings of the three weeks previous to the onset of itching. Dr. Barendt used the β-naphthol ointment first introduced by Kaposi. It was a superfatted soft soap containing about 9 per cent. of β-naphthol. It had the advantage of neither staining nor possessing a disagreeable odour and, above all, did not aggravate the secondary lesions, which sulphur ointment, especially in long-standing scabies, was liable to do.—Dr. G. G. STOPFORD TAYLOR stated that treatment was unsatisfactory unless all underclothes and bed-linen were boiled and those clothes which could not be so treated were stoved. The Liverpool sanitary authorities would undertake the stoving free of charge.

Mr. COLIN CAMPBELL showed a patient after 12 weeks' treatment by Intratracheal Injections of Izal in Pulmonary Tuberculosis.

Dr. T. R. GLYNN classified 21 cases of Intrathoracic Tumour under the following heads: Hodgkin's disease with implication of the mediastinal glands, four cases; sarcoma of some groups of superficial glands, with implication of the

mediastinal glands, four cases; primary sarcoma or cancer of the mediastinal glands or thymus, six cases; primary cancer of the lungs, six cases; and sarcoma of the pleura, one case. The complications included pleuritic effusion in six cases, in two of which it was hæmorrhagic; and invasion of the vertebral canal by growth in six cases causing paraplegia of sudden onset in four and of gradual onset in two cases. The secondary changes in the lungs were illustrated by drawings; the earlier symptoms in these cases were pain and cough, and the later—cancer of the lung (three cases)—sanguineous expectoration. Physical signs of intrathoracic pressure were present in 13 cases. The remaining physical signs and the duration of life were discussed and a short account of the individual cases was given.

Mr. A. BEITS TAPLIN in his report on Treatment by Hypnotic Suggestion said that hypnotism had been evolved in the past from such a labyrinth of superstition and nonsense that he almost felt inclined to apologise for introducing the subject to the notice of a professional audience as an acknowledged branch of therapeutics. Its history during the last 170 years was full of absorbing, even of tragic, interest here and there, and was ably told in the works of many medical men, both in England and on the continent. Hypnotism was generally acknowledged by all observers to be a physiological and not a pathological condition, and to be absolutely free from danger in competent hands. It had been found most useful in those many cases which were the despair of the profession and which were characterised by pain, spasm, or other nervous phenomena, in which no organic cause could be found and for which no other therapeutic measures seemed to be of any avail. The time for its study and reception by the medical profession was ripe and to prevent its possible abuse in ignorant or unscrupulous hands it was much to be desired that as soon as possible its use should be limited by legal enactment to properly qualified persons under proper control.—Dr. GROSSMANN thought that no advance had been made in our knowledge of the subject for 20 years. The account he had given before the Medical Institution 18 years ago was based on a visit to Professor Charcot at the Salpêtrière and a stay at Nancy where he studied the methods and saw the patients of Dr. Liébault and Professor Bernheim. Professor Charcot's patients were all hysterical, while at Nancy every sort of patient was treated. Three phases were distinguished—lethargy, catalepsy, and somnambulism. The Nancy school recognised nine different degrees of susceptibility ending with somnambulism followed by amnesia. All the phenomena were explained by suggestion and the modes of producing the various stages of hypnosis employed by the Paris school were recognised as suggestions. The Nancy school considered the hypnotic state as analogous to sleep with the difference that the subject was *en rapport* with the operator, hearing and understanding him. Dr. Grossmann had no difficulty in hypnotising subjects, but he had never seen any therapeutic results in his cases—paralyses of ocular muscles, restricted fields of vision, &c.—nor had he himself seen the extraordinary trophic phenomena, blisters and burns, so graphically described by Professor Krafft-Ebing. It was always a difficult matter to find out how far the subject was really under the influence of the operator and to what extent he was shamming. For his own part he thought Braid's motto, "Unlimited scepticism is equally the child of imbecility as implicit credulity," was all very well but the following one was safer: "When you see a fact, doubt it."—Mr. A. E. DAVIS agreed that subjects often deceived the hypnotiser but could not accept the statement made by one of the speakers that hypnosis was produced in hysterical neurotic soil which, in his experience, was the least fruitful of all; he agreed with the theory of the late F. W. Myers that the phenomena were produced in the subliminal consciousness, which was supported by the fact that the acuity of the senses could be enormously increased. He pointed out that of the 13 patients mentioned by Mr. Taplin two only were males. The objection of males to try hypnotism was a great drawback to its practice and study. Though he believed it was not possible to instil viciousness into a subject who had no natural inclination to it the dangers of being *en rapport* with some women subjects were obvious. He had repeatedly produced trophic changes. Convulsions in hysterical subjects could be obviated by self-confidence and knowledge on the part of the hypnotiser.—Dr. S. M. WHITAKER said that a better description of the treatment would be "treatment by suggestion with or without hypnosis," for it was usually unnecessary to hypnotise the patient more deeply than the lightest lethargic stage when he would accept suggestions and the operator could obtain good therapeutic results. During treatment there should be no distracting sounds and sights. He used the method of "monotony." The cases suitable for this treatment were those in which there was functional disturbance, including most cases of organic lesion, and so far as this element existed it was possible to benefit the patient. He had obtained excellent results in the attacks of palpitation of exophthalmic goitre, headache, insomnia, and pain generally. Owing to the depth of hypnosis required for general anæsthesia the method was not likely to compete with ordinary anæsthetics.—Mr. C. T. STREET said probably all were agreed that there was such a thing as hypnotism but were divided as to its usefulness. He asked, "Was not treatment by suggestion without hypnotism preferable?" Those who worked among the insane knew what beneficial results could be produced by suggestion, how the melancholic was encouraged to look on the brighter side of things, how the maniac was calmed by suggestion and example, and how it could be suggested to the hysterical that she could exercise self-control if she tried. The result from this form of treatment might be slow but it was certainly more sure and lasting than that produced by hypnotism.—Dr. T. R. GLYNN, Dr. STANLEY A. GILL, and Dr. W. B. WARRINGTON also took part in the discussion.

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FORFARSHIRE MEDICAL ASSOCIATION.—The last ordinary meeting of this society for the present session was held in Dundee on April 6th, Dr. R. Sinclair, the President, being in the chair.—Mr. D. M. Greig showed a man, aged 68 years, after operation by Evagination of the Testicle for Large Double Hydrocele, with a stereoscopic photograph of the condition before operation. He emphasised the simplicity and safety of the operation and expressed surprise that the certainty of a radical cure had not led to a more general appreciation of its merits.—Mr. Greig also showed an infant who had at birth an Occipital Meningocele larger than its head. The cyst collapsed at birth but soon refilled and at the age of five and a half weeks Mr. Greig successfully removed the tumour. A stereoscopic photograph of the condition at the time of operation was exhibited and the actual tumour was demonstrated.—A third case shown by Mr. Greig was one of Morphœa of the Right Forearm associated with contraction and atrophy of the muscles in the upper half of the limb attached to the external condyle of the humerus. The patient was a woman aged 80 years and had a history of only slight injury. The hand was in good condition, though no pulsation could be felt in any of the vessels at the wrist, and the affection seemed to implicate the musculo-cutaneous nerve in its distribution to the skin and the musculo-spiral nerve in its distribution to the muscles and the radial as regards sensation. Mr. Greig expressed the opinion that the condition was primarily a nerve affection and pointed out the incongruity of the distribution with a vascular derangement.—Professor J. A. C. Kynoch showed a specimen of Carcinoma of the Uterus removed by vaginal hysterectomy from an unmarried woman, aged 56 years. The disease, which had been confirmed by microscopical examination, was confined to the endometrium. In contrast to this was a specimen of carcinoma in which the whole body of the uterus was involved except a small part at the fundus. A third uterus which showed a condition of diffuse adenoma of the endometrium with a suspicious character on microscopic examination had also been removed by vaginal hysterectomy. He also showed an ovarian cyst with torsion of the pedicle which had produced symptoms calling for immediate operation in a young multipara 14 days after a normal confinement. A fibroid removed from the anterior wall of the uterus after a previous operation by removal of the appendages which had no effect in checking the excessive hæmorrhage, the most prominent symptom, was also shown. The second operation was successful in giving relief.—Professor D. MacEwan read a paper on the Local Treatment of Surgical Tuberculosis. In introduction he emphasised the importance of constitutional as an adjunct to local treatment and pointed out the desirability of extending the modern sanatorium method to the hospital class of cases and stated that the natural tendency to cure of tuberculosis in bone and joints was probably greater than in pulmonary tuberculosis. In many cases he considered that it was advisable to combine the open-air treatment with complete bodily rest in the

recumbent posture, as well as by using methods to obtain complete rest for the affected parts. By the aid of lantern views he demonstrated what he considered to be the best methods for securing that immobilisation and the prevention and correction of abnormal attitude in spine and hip disease. He was of opinion that in tuberculosis of bones and joints better results both as regards life and function were, as a rule, obtained by conservative than by operative means. In non-suppurative joint cases parenchymatous and intra-articular injections of iodoform gave good results. Mixed infection with pyococci was a complication to be dreaded and carefully guarded against; hence abscesses should not be opened but aspirated and then injected with iodoform, naphthol-camphor, or other modifying substances. He contrasted the method of incision and drainage with that of aspiration and injection and pointed out how it was almost impossible in many cases where there was a great deal of discharge, however careful one might be in the dressings, entirely to exclude other organisms. Mixed infection resulted in greatly delayed healing and frequent formation of fistula. With the closed method of treatment a cure was almost certain. He described his method of procedure in various cases, exhibited the syringe which he employed and explained its working, and enumerated various precautions which were necessary for success. It was essential always to choose a spot for puncture where the skin appeared to be quite normal; the skin must be thoroughly disinfected, and the needles and syringe sterilised; it was advisable also to soak the iodoform in carbolic solution before use. He preferred to use iodoform 10 per cent. in ether with sometimes a little glycerine or guaiacol. During the past three years he had treated 44 cases of "closed tuberculosis," in 34 of which bones or joints were affected, by injection or by aspiration and injection. These included cases of tuberculous periostitis of the jaw; spinal caries, with abscess in the neck; caries of rib, scapula and ilium; arthritis of elbow, wrist, ankle, hip and knee (several cases); six cases of psoas and two of lumbar abscess, &c. In three cases the treatment failed—two improved but died afterwards from pulmonary tuberculosis; in 41 the results were satisfactory. During that period no tuberculous abscess was opened and thus no patient was exposed to the risk of mixed infection. He considered that the results thus obtained were most encouraging and a great improvement on former methods and worthy of a more extended trial in the future. In advanced cases of bone disease with sinuses he had employed von Mosetig-Moorhof's method of clearing out the cavity and packing with iodoform paste with a considerable amount of success.—In the discussion which followed, Dr. G. Halley objected to the opinion expressed by other members that the results of the treatment were convincing as he considered that in many cases time could have been saved and the disease with more certainty eradicated by excision of the affected parts.—The majority of the meeting, however, were of opinion that the new method of treatment was a great advance on that of former days.

DEVON AND EXETER MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on April 7th, Mr. Russell Coombe, Vice-President, being in the chair.—Dr. A. W. F. Sayres reported a case of Aortic Aneurysm, exhibiting the patient and also radiographs taken by Dr. J. D. Harris. The patient was a man, aged 48 years. There was no definite history of syphilis. His health had been good until five years ago when he began to suffer from pains in the upper part of his chest above the heart. At this time it was pointed out to him that both radial pulses were absent. During the next three or four years the chief trouble was severe pain over both clavicles, passing up both sides of the neck to the back of the head and over both shoulders down the arms. For the last year this pain had not troubled him much but he had suffered from dyspnœa, at times severe, which was accompanied by stridor. In January, 1906, the patient had a severe attack. Dyspnœa was extreme; there was much stridor and he was cyanosed and he felt as if he would be suffocated. There was some dysphagia but he was able to swallow liquids freely. Laryngoscopic examination exhibited no paralysis of cords. The pupils were equal and acted to light. The trachea was markedly pushed back and there was an area of dulness with its centre at the left sterno-clavicular joint and pulsation was plainly visible here but no bruit could be detected. Tracheal tugging was not marked. Neither radial pulse could be felt. No marked sign of arterio-sclerosis was present. There was no loss of flesh. Radiographs showed marked shading in the region of the transverse arch of the aorta. For two and a half months the treatment consisted of five grains of potassium iodide, and for a month a modified Tufnell's diet was given. There were marked improvement, very little dyspnœa, and scarcely any pain. The following are interesting points in the case: (1) loss of both radial pulses; (2) cessation of pain; (3) absence of pressure on recurrent laryngeal and sympathetic nerves; (4) absence of œdema of the neck; and (5) improvement in pressure symptoms.—Mr. A. C. Roper and Mr. R. V. Solly reported a case of Cerebro-spinal Meningitis secondary to Middle-ear Disease. The patient, a stoker in the navy, aged 25 years, was admitted into hospital on Dec. 7th, 1905. In October a polypus had been removed from his left ear and a fortnight before admission he had been discharged from the naval hospital as fit for duty, but as he did not look well his commander gave him a short holiday. In a few days he was admitted suffering from severe pain, giddiness, and dimness of vision; severe vomiting had been present. There were some swelling and tenderness of the left side of the neck. No optic neuritis was present. The mastoid was trephined and a communication with the external auditory meatus was established but no pus was seen and no relief was obtained. Marked pyrexia of irregular type was present. The pulse was slow and full and there was free perspiration. Nystagmus was present, lateral and vertical. The pulse and respiration were markedly irregular. A blood count showed 33,000 leucocytes per cubic millimetre, with 82 per cent. of polymorphonuclears. Lumbar puncture was performed and a few drachms of fluid were removed. This was opalescent and contained an enormous proportion of polymorphonuclears; a very few lymphocytes, large and small, were also present. A few diplococci and some short, rather thick bacilli, negative to Gram, were also seen in stained films of centrifugalised fluid. A culture was made but proved sterile. The patient did not improve and died on the next day. Kernig's sign and increased plantar reflexes had been present. A post-mortem examination showed marked purulent meningitis at the base of the brain. No abscess was present. There was thrombosis in both petrosal sinuses. The petrous portion of the temporal bone (left) was soft and was easily chiselled away exposing a mass of pus and débris where cochlea and semicircular canals should be. There was marked sclerosis of the mastoid cells. Pus and granulating tissue passed into the aqueductus Fallopii. Films of pus at the base of the brain showed microscopically capsulated diplococci and many bacilli, some large and some small, and Gram-negative. Mr. Solly exhibited microscopical slides of films of the cerebro-spinal fluid and pus obtained post mortem. He pointed out the correspondence between the blood count and the lumbar puncture as regards the predominance of polymorphonuclears. The usual organism in cerebro-spinal meningitis after ear disease was the pneumococcus, but a lepto-meningitis due to the influenza bacillus occurred and it was possible that the bacilli present in the cerebro-spinal fluid were these. The French authorities, Widal, Labbé, and others, had especially studied the cyto-diagnosis of cerebro-spinal fluid obtained by lumbar puncture, which was particularly useful in distinguishing tuberculous meningitis (where an excess of lymphocytes was present) from septic cerebro-spinal meningitis (where polymorphonuclears predominated), and also in distinguishing both of these forms of meningitis from conditions such as typhoid fever, where no cerebro-spinal meningitis was present and the fluid was normal.—Mr. B. Dyball reported a case of severe Erysipelas treated by antistreptococcic serum. A fortnight previously the patient had suffered from a peritonsillar abscess. The temperature was high and the rash extended all over the body, beginning in the forehead. Treatment consisted of a mixture of strychnine and cinchona and an ointment of ichthyol was applied. Four injections of antistreptococcic serum were given, three of ten cubic centimetres, each reducing the temperature and stopping the spread of the rash, and finally one of 20 cubic centimetres, which effected a complete cure. The patient later developed venous thrombosis and became completely bald. The antistreptococcic serum was not polyvalent.

BRITISH GYNÆCOLOGICAL SOCIETY.—A meeting of this society was held on April 9th, Mr. F. Bowreman Jessett, the President, being in the chair.—Dr. H. Macnaughton-Jones read notes on the Use of Vioform as a Substitute for Iodoform.—Dr. A. E. Giles showed: 1. Uterine Myoma with Suppurating Carcinomatous Ovarian Cyst removed from

a patient, aged 37 years, suffering from paroxysmal attacks of abdominal pain. The attacks began with a sensation of dragging followed by acute pain in the right side. The patient suffered from constipation which was most pronounced during the attacks. Leucorrhœa was succeeded by xanthorrhœa. Menstruation was regular, the amount being moderate without any special symptoms. At the operation the uterus was found to be myomatous, the right ovary was occupied by a large adherent cyst, the left oviduct was inflamed, and there were firm adhesions between the tumours and the bowel. The uterus and the cyst with the left appendages were removed. On opening the cyst the contents were found to be suppurating and the wall contained solid adenomatous growth with malignant degeneration. The patient progressed satisfactorily without any evidence of recurrence. 2. Myoma of the Cervix from a patient, aged 32 years, suffering from menorrhagia but without any disturbance of the bladder or bowel. 3. Myoma removed from a patient, aged 36 years, by an abdominal intrauterine myomectomy. The patient made a good recovery.—Dr. Frederick Edge showed: (1) Myoma of the Uterus which became strangulated and simulated cancer of the fundus, removed from a patient, aged 58 years, who was single and passed the menopause eight years previously. There was a family history of cancer. The patient had some pelvic pain during last winter. One month previously after walking sudden acute pelvic pain came on with a pulse of 180 and a temperature of 104° F. On examination a tumour was found closely adhering to the fundus, causing acute pain on manipulation. The diagnosis lay between an ovarian cyst with axial rotation, carcinoma, or a myoma undergoing malignant degeneration. At the operation the uterus was found to be retroverted with a strangulated myoma behind the right broad ligament. 2. A Pregnant Uterus of four months with an almost sessile myoma removed by supravaginal hysterectomy from a patient, aged 45 years, complaining of severe abdominal pain. At the operation the myoma was found to be intimately adherent to the uterus and bowel. The tumour was ligatured off with No. 5 silk but this cut through the tissue, causing hæmorrhage which necessitated removal of the uterus as well. 3. A Myomatous Uterus with Expanded Cervix removed by abdominal hysterectomy. The cervix was removed after supravaginal hysterectomy, leaving a portion of the anterior wall.—Dr. Edge read a short communication on the Advantage of Panhysterectomy over Supravaginal Hysterectomy, basing it on two fatal cases where the latter operation had been performed, the cause of death in one case being secondary hæmorrhage and in the other acute general peritonitis on the tenth day. The method of operation advocated was similar to Doyen's, with the addition of making peritoneal flaps anteriorly and posteriorly.—Dr. Smallwood Savage (for Professor J. W. Taylor) showed a large Uterine Myoma removed from a patient suffering from diabetes, aged 46 years. The patient had one child nine years previously and one miscarriage eight years ago. She complained of menorrhagia and had diabetes for more than a year. The abdomen had rapidly increased in size for several months. The urine was acid and contained some albumin and much sugar. The progress had been satisfactory so far.—Dr. H. Macnaughton-Jones showed an Adeno-Carcinoma of the Left Ovary removed from a patient, aged 56 years, who complained of severe pain since a fall in December, 1905. On operation two ovarian tumours were found and a quantity of ascitic fluid escaped. In the wall of the left tumour malignant spheroidal cells were found.—The President showed a Spindle-celled Sarcoma of the Left Ovary removed from a patient, aged 50 years, who was admitted for an abdominal tumour and stabbing pain. The climacteric occurred six months previously. The pain increased during the last month and the abdominal swelling became more prominent. At the operation a large quantity of dark fluid escaped from the abdomen; the left ovary was occupied by a solid tumour which had rotated on its pedicle at least twice. This tumour was removed and no secondary deposits were found. The right ovary was fibrous but was not removed. The patient made a rapid recovery. The pathological report stated that the stroma showed all the characters of a spindle-cell sarcoma with areas of necrosis and hæmorrhage.

CORK MEDICAL AND SURGICAL SOCIETY.—A meeting of this society was held on March 28th, Dr. Richard P. Crosbie, the President, being in the chair.—Dr. Patrick T. O'Sullivan read notes of two cases, one of the Swallowing of Three-fifths of a Grain of Strychnine and one of Poisoning by Phosphorus. In the first case the patient was a man, aged 62 years, who had suffered from diabetic glycosuria for four years. A mixture consisting of two drachms of liquor strychninæ (B.P.) in four ounces of water was prescribed for him and he was directed to take one teaspoonful in a wineglassful of water after meals. He, however, whilst writing letters after dinner, poured out a wineglassful of the mixture and drank it off. An hour later, becoming alarmed, he sent for Dr. O'Sullivan who found him in a state of great excitement but showing no symptom of poisoning except some slight trembling of the leg muscles. He was watched for an hour and seen frequently during the evening, but no other signs appeared and next morning he was all right. He had swallowed three-fifths of a grain of strychnine and there were instances where a quarter of a grain had proved fatal. The explanations suggested by Dr. O'Sullivan were (1) that the strychnine was bad; (2) that the full meal prevented the rapid absorption of the drug; and (3) that owing to the advanced diabetic condition the drug was tolerated in larger doses than in the normal subject. In the case of phosphorus poisoning the patient was a child who had swallowed the heads of several lucifer matches. There was jaundice with enlargement and tenderness of the liver. The stools were clayey and smelt of phosphorus and in the dark showed faint phosphorescence. The urine was scanty and bile-stained and showed a small trace of albumin, but no leucin or tyrosin. The patient was restless and did not sleep at first, but afterwards became stupid and difficult to arouse. There was no trace of bile in the stools for 29 days. The child made a good recovery, being carefully nursed and treated expectantly.—Dr. N. H. Hobart read notes of a case of Fibromatous Tumour of the Capsule of the Kidney. The patient was a married woman, aged 26 years, and a primipara. Three days after a normal labour which terminated on Feb. 4th, 1906, a tumour of about the size of a small orange was noticed on the right side of the abdomen, at the level of the navel. On Feb. 28th Dr. Hobart saw the patient for the first time and found a large oval smooth tumour extending from the right iliac fossa to about two inches above the umbilicus. On March 4th, as the patient's temperature had been about 102° F. for some days, he aspirated and withdrew a small quantity of dark serum. On the 5th he removed the tumour by a median abdominal incision. The cavity was packed with a Mikulicz bag, by the side of which the handles of two pressure forceps, which had to be applied to the kidney where it was accidentally wounded, were allowed to emerge. The solid portion of the tumour was of about the size of a small adult head. The Mikulicz bag and pressure forceps were removed in 24 hours and the pedicle clamp 24 hours later. The patient made an uneventful recovery. Only a small quantity of clear serum was now discharging from the sinus.—Dr. Hobart also showed a Hatpin removed from the Urethra of a man, aged 22 years. He first tried to secure the point but failing in this he pushed the point through the skin until the head alone remained in the urethra. Next altering its direction he pushed the pin out through the meatus.—Dr. Henry Corby read notes of a case of Empyema treated by Estlander's Operation and showed the patient. In order to empty the cavity the patient with hips raised high, resting on his shoulders, was instructed to cough repeatedly in that position and the pus flowed out very freely. He was then put in a half-sitting posture and again repeatedly coughed, with similar results. This was done at each subsequent dressing and in five days the pus had completely disappeared, there being now only a little serum issuing from the minute sinus left. The patient had gained greatly in weight.

GLASGOW PATHOLOGICAL AND CLINICAL SOCIETY.—A meeting of this society was held in the Faculty Hall on April 9th, Dr. J. Lindsay Steven, the Vice-President, being in the chair.—Mr. A. Ernest Maylard described the features of a case of Malignant Disease of the Duodenum surrounding the orifice of the common bile duct. The patient, a man, aged 39 years, was admitted to hospital suffering from jaundice, and dating the commencement of his illness—four months previously—to attacks of shivering with sense of prostration and with yellowness of the skin noted about ten days later. On admission the patient suffered from obstructive jaundice with marked pallor. No pain, tenderness, or tumour was noted in the region of the gall-bladder but a sense of resistance was elicited. About three weeks after admission an exploratory laparotomy was performed and the distended, tense gall-bladder was

opened and drained. No gall-stones were found. In the second part of the duodenum a somewhat moveable tumour, apparently implicating the head of the pancreas and common bile duct, was found and as the tumour was considered to be inoperable it was decided to complete the operation as a cholecystotomy. A biliary fistula resulted but the jaundice became less marked and the general condition of the patient improved. He was sent to the convalescent home for some weeks and returned to hospital with the object of having a cholecyst-enterostomy performed as the fistula was still discharging bile, but without warning he suddenly collapsed and died a few hours after his re-admission.—Dr. John Anderson described the conditions met with at the post-mortem examination and showed the specimen of the tumour of the duodenum and microscopical preparations of the same. There was a moderate degree of jaundice and the organs were bile-stained. The heart muscle was soft and the right side was dilated. The growth, which was situated in the second part of the duodenum, presented the appearances of a spherical carcinomatous ulcer of three inches in diameter, involving the bile papilla, but the diverticulum of Vater was still patent. Above its relationship to the head of the pancreas the common bile duct was dilated, and there was slight dilatation of the duct of Wirsung. No evidence of tumour tissue was present in the head of the pancreas itself, but the lymphatic glands around the same were enlarged and were evidently the seat of malignant invasion. The bile ducts and portal branches in the liver were dilated but there were no malignant nodules present. The gall-bladder, though collapsed, was healthy in appearance.—Dr. T. K. Monro showed a specimen of Aneurysm of the Splenic Artery from a case of ulcerative endocarditis. The patient, a young man, aged 23 years, was admitted to hospital suffering from breathlessness on exertion, weakness, and pain in the chest and legs. During his residence in the wards he suffered from arthritis of the knees and irregular pyrexia. The heart was enlarged and at the apex A.S., V.S., and V.D. murmurs were heard and at the other cardiac areas V.S. and V.D. murmurs. The lungs were normal and the spleen, at first noted as normal, was afterwards made out to be enlarged. The urine was albuminous and there was anæmia of the secondary type. Sodium salicylate and antistreptococcic serum were both tried but failed to have effect. The bacteriological examinations were negative. At the necropsy the heart was found to be enlarged and there were large, almost cartilaginous, vegetations on the aortic cusps, and smaller warty vegetations on the mitral and tricuspid. Infarctions were present in the spleen and the splenic artery at its point of entrance into the organ showed the presence of an aneurysm of the size of a Tangerine orange and filled with blood clot.—Dr. A. M. Ramsay and Dr. Hugh Walker gave a clinical and pathological report on a case of Tuberculosis of the Uveal Tract and showed microscopical specimens from the same. The patient gave a history of good health up to six weeks before admission to hospital when he began to suffer from what he called inflammation of the eye and latterly of a swelling at the upper aspect of the corneo-scleral junction, which had a soft and yellowish-white appearance and the conjunctiva covering it was traversed by large varicose vessels. There was a bad tuberculous family history and as the eye became worse after admission it was enucleated. In addition to the extra-ocular mass a large-sized intra-ocular tuberculous tumour was present.—Dr John Patrick showed two brothers who suffered from Malocclusion of the Jaws. The only teeth which approximated were the back molars. The teeth of the lower jaw were somewhat larger and were situated external to those of the upper, while there was present a very high arch of the palate. The difficulty of explanation of the origin of the condition and of a means of treatment were commented upon.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on April 18th, Mr. T. J. Dabell, the President, being in the chair.—Dr. F. H. Jacob showed a married woman, aged 36 years, the subject of Paresis of the Third Cranial Nerve. Some improvement had taken place with large doses of potassium iodide.—Mr. W. Morley Willis read notes of a case of Mucous Colitis treated by Appendicostomy. The patient was a woman, aged 32 years, who had suffered for at least two years with loss of flesh, abdominal pain, and hard and scybalous motions: independently of fæcal stools she also passed blood, mucus, or membrane daily, and there was the train of neurotic symptoms usual in such cases. At the operation a month ago the appendix was brought out between the fibres of the external oblique muscle and fixed there, the projecting portion being shaved off three days later. A week after the operation lavage of the colon was begun, from two to three pints of soap and water being introduced through a small catheter, and no leakage had ever occurred from the stump of the appendix beyond a little moisture due to glandular secretion. Very great improvement had taken place in all the symptoms during the three weeks in which this measure was carried out daily, the fluid being retained for 20 minutes or longer before a natural evacuation followed. The patient had now developed a healthy appetite and had begun to take an intelligent interest in her life again. Mr. Willis pointed out that the disadvantages of a colotomy wound were entirely avoided and thought (as recently suggested by Sir W. H. Bennett) that the operation would also prove a serviceable one where there was great distension in cases of highly toxic peritonitis or pneumonia and for feeding purposes but did not anticipate that it would be of much real value in typhoid fever. There ought to be no difficulty, if necessary, in closing the fistula when the patient's health was thoroughly re-established.—The case was discussed by the President, Dr. C. H. Cattle, Dr. Jacob, Dr. W. Hunter, Mr. W. J. H. Hepworth, Mr. E. Powell, Dr. F. R. Mutch, Dr. W. Tibbles, and Mr. R. G. Hogarth, and Mr. Willis replied.—Dr. Jacob showed photographs of a patient suffering from Syphilitic Psoriasis of the Palm. Special interest arose from the fact that before any history of syphilis was forthcoming she had undergone at least three curettings for intractable metrorrhagia and the uterus was finally removed and was found to have undergone fibrotic or sclerotic changes.—Dr. W. T. Rowe showed a specimen of Primary Tuberculosis of the Intestine in a breast-fed infant, aged six and a half months. The child had had cow's milk for only two days and death was due to acute hæmorrhage from an ulcer. Since then the child's grandmother had come under treatment for pulmonary tuberculosis so that infection had most probably occurred from this source.—Dr. Cattle quoted a similar case in an adult and pointed out that both cases were in strict accordance with Koch's view as the infection was from human and not bovine sources.—Dr. Powell showed two specimens found in the post-mortem room of an asylum: 1. Primary Carcinoma of the Liver in a woman the subject of alcoholic dementia. The liver as a whole weighed seven and a half pounds and the disease was of a latent character until abdominal distension occurred a short time before death. 2. A Heart weighing 33¼ ounces. Great hypertrophy had occurred as the result of mitral and aortic stenosis, the latter orifice being so far occluded as only to admit a match.

ROYAL ACADEMY OF MEDICINE IN IRELAND: SECTION OF OBSTETRICS.—A meeting of this section was held on April 6th, Sir Arthur V. Macan being in the chair.—Dr. Andrew J. Horne exhibited a Myoma of the Uterus showing Cystic and Calcareous Degeneration. The patient was aged 45 years, was the mother of six children, and had menstruated regularly.—Mr. E. Hastings Tweedy exhibited a specimen of Cancer of Both Ovaries. The patient was a woman, aged 21 years, who had been operated on in a hospital some weeks previously for an ascitic collection, supposed to be the result of tuberculous peritonitis. She entered the Rotunda Hospital, Dublin, five weeks afterwards in an apparently dying state and enormously distended by peritoneal dropsy. On opening the abdomen he found the intestines tucked up under the diaphragm and very adherent to each other; they, together with the entire peritoneum, were studded with coarsely granular masses, which he remarked at the time of the operation resembled endothelioma rather than tubercle. The ovaries appeared papillomatous and were both removed. The abdominal cavity was drained with five wicks of iodoform gauze in the hope that they would be the means of causing an adhesive peritonitis and so obliterating the weeping surfaces. For several days fluid escaped through the drains but this gradually became less and the patient left the hospital symptomatically cured and declaring that she was feeling better than she had done for two years. He had examined the patient that morning. Her abdomen was hard and the cancer seemed again advancing.—Dr. R. J. Rowlette, who examined the pathological condition of the parts removed, said that the tumours were of a nodular character, the nodules varying

from the size of peas to that of beans. He regarded them as endotheliomata originating probably from the endothelium of the peritoneum.—Dr. Arthur N. Holmes read a paper on a case of Hernia of the Gravid Uterus through an old abdominal scar. The patient had become pregnant shortly after the operation and had noticed a lump protruding from the lower part of the abdomen; this swelling after the confinement almost disappeared. She again became pregnant, the lump steadily increasing, and circular ulcers formed where the clothes and thighs had rubbed. After delivery in November, 1903, the tumour remained, though smaller in size. On Dec. 22nd, 1905, she went to the Rotunda Hospital. On examination there was found a tumour springing from between the umbilicus and symphysis, which, falling forward, reached more than half-way down the front of the thigh. This proved to be the uterus and the fœtal movements were felt. The skin was very thin and large circular ulcers were distributed over its surface. Some of these extended to the uterine muscle. The patient stated positively that she was at full term and that labour pains were beginning. She delivered herself suddenly without any trouble of a live child who presented all the appearance of being up to full term. The weight was three and a half pounds and the length was 14 inches. The placenta was removed manually on account of hæmorrhage. Reduction of the uterus was impossible on account of the adhesions. The diminutive size of the child was thought to be due to the diminished blood-supply consequent on the abnormal position of the uterus and the constriction caused by the ring of the sac. The woman delivered herself and had no pain. The tumour was of about the size of a man's head. Dr. Purefoy told him that the woman was going about her work and was apparently well. The child died shortly afterwards from an attack of green diarrhœa.—Dr. Horne said that he had never seen a case of this kind. It was hard to conceive how the child was born through so great a constriction.—Dr. James S. Ashe read a paper entitled "Some Remarks on Uterine Suspension and Shortening Round Ligaments" (Adelaide Hospital Report, 1905). In it he showed a preference for the operation of suspension rather than for the shortening of ligaments.—Dr. Horne said that he had rarely seen any untoward results follow the use of pessaries, and if such did occur it was possible the pessaries had not been properly applied.—Sir Arthur Macan said that he rather favoured the use of pessaries. A woman came to him who had worn a pessary for eight years. She had no vaginitis and the pessary showed no signs of wear. If pessary treatment was at all beneficial it was preferable to operation.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on April 6th, Dr. J. L. Steven, the President, being in the chair.—Dr. A. N. McGregor (for Dr. T. K. Monro) showed a man, aged 40 years, on whom the operation of Epiplopexy had been performed nearly eight months previously for cirrhosis of the liver with ascites. The result was thoroughly satisfactory. Except that on one occasion, about two months ago, there was melæna, the patient had been perfectly well since the operation and feeling better indeed than he had done for 15 years previously. A considerable vein could now be seen running down from the scar to the left groin. The operation consisted simply in suture of the omentum to the anterior abdominal wall.—Dr. John W. Findlay showed (for Dr. Monro) a patient who was the subject of Syringomyelia with the typical symptoms. The loss of the senses of pain and temperature involved the upper part of the trunk, the upper limb, the neck and the scalp, all on the right side. It was noteworthy that there was loss also of muscular sensibility in the right arm, as tested by compression of the muscles and by faradism.—In the absence of Dr. Monro Dr. Findlay also described the clinical features of a case of Syringomyelia which was under observation in the Royal Infirmary some time ago. The patient died after a comparatively short residence, having been admitted at a late period of his disease and dying no doubt in consequence of exhaustion and septic poisoning from the formidable bed-sores which exposed several bones and discharged large quantities of pus. The symptoms of syringomyelia were no longer distinctive at this stage, although the condition had been suspected a number of years previously.—Dr. Hugh McLaren showed sections of the Spinal Cord which contained one or more cavities extending through the great part of its length. The cavity was not simply a dilatation of the central canal although it communicated with it. Widespread sclerosis was also present.—Dr. W. F. Somerville read a paper on the Influence of High-frequency Currents on the Surface Temperature of the Body, illustrated by charts. He found that high-frequency currents produced a rise of temperature on the surface of the body varying with the dosage, the site chosen and the mode of application, by their action on the vaso-motor system producing increased peripheral circulation, and in some cases a dilatation of the deeper vessels also. The rise of temperature varied from 1·4° to 17·4° F.

DERMATOLOGICAL SOCIETY OF LONDON.—A meeting of this society was held on April 11th, Mr. Willmott H. Evans being in the chair.—Dr. Edward Stainer showed an Acneiform Eruption of the Face in a man, aged 24 years, who had had the eruption for four years. It had left an extraordinary amount of scarring and the possibility of its being acne varioliformis was discussed, but there were no lesions in the parts covered with hair, and this diagnosis was therefore dismissed. The general opinion was that it was a case of acne vulgaris with a wholly exceptional degree of scarring.—Mr. Evans showed a case of Linear Papillary Nævus in a little girl in whom the condition was congenital. The distribution was probably metameric rather than in the course of peripheral nerves, Mr. Evans pointing out that no peripheral nerve corresponded with the site of the eruption. The right shoulder, the upper arm, the forearm, and the back of the head had a linear streak extending to the cleft of the index and middle fingers. There was a small patch of similar character on the right half of the chin. Mr. Evans proposed to treat the condition with x rays.—Dr. E. G. Graham Little showed a case of Lichen Planus Annulatus in a man who had had the disease as now present for four months. There was no itching. There were numerous small papules scattered chiefly over the abdomen and not very typical of lichen planus and there were several ring-shaped lesions on the lower part of the abdomen, the rings being of the size of a threepenny piece and constituted by small papules which had run together. On the buccal mucous membrane there was a patch of characteristic lichen planus and a less typical appearance in the form of a line of raised white epithelium on the mucous membrane both of the mouth and of the glans penis; in the latter case the line went entirely round the glans in a festooned wreath. A section of one of the papules from the abdomen showed the typical features of lichen planus.

# Reviews and Notices of Books.

*Clinical Diagnosis: the Bacteriological, Chemical, and Microscopical Evidences of Disease.* By RUDOLF VON JAKSCH, M.D. Fifth English edition, based upon the Fifth German edition, but containing additional matter and illustrations. Edited by ARCHIBALD E. GARROD, M.D. Oxon., F.R.C.P. Lond. London: Charles Griffin and Co. 1905. Pp. 602. Price 24*s.* net.

THE unsigned preface, presumably by the author, refers to the loss sustained by the premature death of Dr. J. Cagney who originally translated the volume, and to the work of Dr. A. E. Garrod who has revised the present translation and made many additions to the book. The general scope of this volume is too well known for it to stand in need of detailed description. In spite of its title it is concerned rather with the work of the laboratory than with that of the wards or of the bedside. The subtitle forms a truer description of the nature of the information here afforded and the time has come when it is recognised that this information is of incalculable service, although it does not replace clinical observation. In the present edition, within the limits defined by the subtitle, the volume is truly marvellous in the general accuracy with which it reflects all recent advances in methods of laboratory investigation. New intruments of precision are fully described and illustrated, while the results of the most recent researches are also presented in a condensed but an intelligible form. Attention is specially directed to the inclusion, by permission of the Royal Society of London, of a plate which shows forms of human tryparosoma and which is

taken from the reports of the Commission on Sleeping Sickness. In the text relating to this subject an amusing misprint occurs; by the unfortunate insertion of a comma the identity of a physician is obscured and a surgeon is credited with having made certain unexpected recommendations (*vide* p. 80). As a rule, however, the new material, which is included in square brackets and is apparently the work of the editor, is concise and serviceable; frequently, though not invariably, it represents the results of his own observations. A word of gratitude must be assigned to the bibliography, both for its completeness and for its arrangement in 70 pages at the end of the volume in divisions which correspond with the different chapters. The value of the book as a work of reference would be increased if a list of authorities arranged alphabetically could be added at the next revision; the numbers in the bibliography indicate the order in which the various statements are referred to in the text and accordingly much time may be expended before the reader can be satisfied that the work of any particular observer has or has not been duly noticed. Meanwhile congratulations are due to the editor for the great trouble that he has taken to render the volume before us so superior to the last German edition; he has incorporated much that must in due season be added by Professor von Jaksch when preparing a new German edition and a certain feeling of satisfaction results from consulting a book, made in Germany, which has been improved upon in its preparation for English readers.

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*A Text-book on Plague.* By Dr. TOHIU ISHIGAMI, Superintendent, Bacteriological Institute, Osaka, Japan. Revised by Professor SHIBASABURO KITASATO. Translated, enlarged, and illustrated with Pathogenic Horticulture by DONALD MACDONALD, M.B., C.M. Glasg. With 152 illustrations and three chromo-lithographic plates. Melbourne: William Ramsay. 1905. Pp. 180. Price 1 guinea.

THE author was induced to write this interesting work, embodying the results of his personal experience on plague, as he found that no book had ever been written on the subject in Japan, and as the disease was tending to become epidemic in Kobé and Osaka medical practitioners there were not infrequently in the dark as to its proper clinical treatment. The work evidently met the growing demand for such a book, for the first edition was soon out of print, whilst a second revised edition also followed the course of the first.

The book opens with a definition and summarised history of plague. The endemic regions of the disease are next enumerated—viz., the foot of the Himalayas, Asir in Arabia, Mesopotamia in Asia Minor, Yunnan and Thibet in North China, and Kisiba in Western Africa and the neighbourhood of Uganda. The author then tells the story of the biology of the plague bacillus, for the discovery of which medical science is indebted to the acumen of his fellow countryman Professor Kitasato. The special characteristics of the bacillus are fully given and the comparative effects of various chemical agents on its vitality are narrated. Dr. Markl's investigations on the toxin of the bacillus are then noted. The author next passes on to consider the extra-corporeal existence of the bacillus in water, soil, dust, food and drink, the urine, and in pieces of cloth and other materials.

With respect to the relation of the disease to insects and rats Professor Kitasato and others have shown that flies, mosquitoes, fleas, ants, bugs, rats, and mice are closely connected with plague epidemics. The insects are believed to invade plague-infected rats and disseminate the infection through sucking their infected blood. Should the insects come in contact with a human body they inoculate it either by stinging or biting. Professor Okada showed also that insects, especially flies, become infected and die as soon as they have tasted a liquid containing plague bacilli. Should a rat eat these dead flies it becomes infected and when that rat dies other rats will prey upon its infected corpse and so an epidemic breaks out amongst them. Professor Okada asserts, therefore, that the insects first become infected and subsequently the rats through eating such insects. Also, since the dejecta of such insects contain a large number of the plague bacilli, there is every opportunity offered for rats and human beings to be infected with the same.

As regards the portals through which the bacillus invades the human body there are three principal ones—namely, wounds, the respiratory system, and the digestive system, and of these the principal one is held to be a wound of the mucous surface or of the skin. The disease was, according to the experience in Formosa and Hong Kong, far more prevalent amongst the poor Chinese who go about barefooted than amongst the British or Japanese soldiers who wear boots and stockings. The post-mortem appearances, macroscopical and microscopical, are next given and then the author passes on to the symptoms. He enumerates five varieties of the disease—viz., the bubonic, pneumonic, intestinal, inoculative, and minor plague or pestis minor. With respect to the pneumonic type, the author shows how liable it is to be mistaken for croupous pneumonia unless special care be taken. The various sequelæ that may be observed are noted; these belong chiefly to the nervous system. Gangrene of the lung may also occur. Respecting prognosis the bubonic variety has the best, whilst the pneumonic form has little prospect of recovery. The acute cerebral type of the disease is invariably fatal.

A valuable chapter on the diagnosis of the affection is given, the diseases for which it may be mistaken being simple infective adenitis, pneumonia, enteric fever, and simple meningitis. In all difficult cases the diagnosis of the disease has to be made by the finding of the bacillus in the sputum, evacuations, blood, or urine, and the method to be followed is clearly described. Respecting the prophylaxis of plague the various measures are considered under the heads of (*a*) preventive measures, e.g., inspection of trains and isolation, conveyance of patients, and quarantine of vessels; (*b*) the treatment of the bacillus by chemicals; (*c*) the treatment of rats; and (*d*) prophylactic inoculation and serum therapy. Dr. Ishigami holds that amongst the remedial measures the most essential procedure is the early extraction of the affected gland, as this exterminates the very incubator of infection. Serum therapy would appear to be of no avail in pneumonic plague. Lastly, very valuable directions are given concerning the practical nursing of the cases.

The author of this very complete work modestly apologises in his preface for its incompleteness, but we can assure him that no such apology was necessary. The translation has been very well carried out by Dr. MacDonald.

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*The Sanitation of Armies on Active Service in the Field.* By THOMAS F. DEWAR, M.D. Aberd., B.Sc. Edin. Arbroath: T. Buncle and Co. 1906.

WE have received a copy of this really valuable little production, apparently intended for private circulation, consisting of less than 100 pages. We have read it with much interest and advantage and therefore hasten to call our readers' attention to it. The author of this essay states that the subject matter, so far as it embodies personal observation, is based upon an extensive and a very varied experience, partly in the combatant ranks and partly in the medical service, in the recent war in South Africa. This, we may parenthetically remark, imparts a broad-mindedness and practical aim to his method of handling

his subject. He explains that the delay in its preparation has been due to the mass of material bearing upon the medical aspects of that war which demanded consideration and review together with other causes. Be this as it may, he has, in our opinion, produced a useful, well-considered, and up-to-date little work. It strikes us as being full of well selected and condensed information but it is not a mere compilation, for there is a running commentary of independent and, for the most part, of wise and sagacious observations. An ample list of references and authorities consulted adds to the usefulness of the essay.

## LIBRARY TABLE.

*The Edinburgh Stereoscopic Atlas of Anatomy.* Edited by DAVID WATERSTON, M.A., M.D. Edin., F.R.C.S. Edin., F.R.S. Edin., Lecturer and Senior Demonstrator in the Department of Anatomy, University of Edinburgh. Section IV. 51 plates. London and Edinburgh: T. C. and E. C. Jack. 1906. Price £1 5*s.* net each section.—We have already indicated, when reviewing former sections of this Atlas, what we consider to be the advantages and what the shortcomings of the stereoscopic method as applied to anatomical illustration. The fourth section of the Edinburgh Atlas worthily sustains its reputation; it includes 51 views, for all of which new dissections have been employed and although we must say that we think that some of these have a somewhat unfinished appearance, since they seem to lack those final touches which make all the difference between a clean and a ragged specimen, yet they are admirably designed for the purposes in view. 25 of the views have been devoted to the upper limb, 16 illustrate the topographical anatomy of the perineum and pelvis, whilst ten illustrate the lumbar region and the positions of the viscera of the abdomen and thorax as seen from behind. The section contains some reproductions of photographs of very great interest and practical utility, in particular those which illustrate the abdominal and thoracic viscera from behind and also those which show the relations of the rectum and of some of the pelvic viscera in the female. These will be studied with interest and profit alike by the student of anatomy and the surgeon: they convey in a very real manner a knowledge of important visceral relations. The views of the surface anatomy of the arm also strike us as being remarkably good.

*Essentials of Surface Anatomy.* By CHARLES R. WHITTAKER, L.R.C.S., L.R.C.P. Edin., L.F.P.S. Glasg., Demonstrator of Anatomy, Surgeons Hall, Edinburgh. London: J. and A. Churchill. 1906. Pp. 40. Price 2*s.* 6*d.* net.—This small volume contains a concise and an accurate *précis* of the main facts of human surface anatomy. The information is conveyed in a series of brief paragraphs, the contents of which are indicated by marginal notes. The arrangement adopted is regional, with the exception that blood-vessels and nerves are considered in special sections—a plan of distinct advantage from the student's point of view. The volume is not illustrated but is interleaved for additional notes. We agree with the author that for a quick revision of the salient points in surface marking the volume will amply suffice.

*The University of Missouri Studies, Science Series, Vol. I., No. 1. Topography of the Thorax and Abdomen.* By PETER POTTER, Associate Professor of Anatomy, St. Louis University; sometime Instructor of Anatomy, University of Missouri. Published by the University. August, 1905. Price $1.50.—We congratulate Professor Potter on the painstaking piece of research which is here presented. The contribution deals with the topographical anatomy of the thorax and abdomen and embodies a minute description and reconstruction of a trunk studied by means of serial sections. The study is of great interest, since the author carefully compares his results with those of other authorities on the subject. The illustrations are carefully prepared and comprise no less than 35 plates which show not only the sections as they appeared when prepared but also the projections of the various viscera on the surface of the body. The author has set a high standard for his successors to emulate.

*Ceylon: Administrative Reports, 1904.* Part IV., Education, Science, and Art. Medical Report by Sir ALLAN PERRY, M.D.Durh., D.P.H. R.C.P. & S. Lond., Principal Civil Medical Officer and Inspector-General of Hospitals. Pp. 78.—This report contains a most comprehensive account of the medical history of the island of Ceylon during 1904. From it we learn that the chief infectious diseases were cholera, of which there were 7 cases with 4 deaths; small-pox, with 10 cases and 2 deaths; malaria, with 5288 cases and 75 deaths; and enteric fever, with 341 cases and 70 deaths. Compared with the numbers of the previous year, malaria was the only disease that showed an increase in its incidence. The cases of cholera did not originate in the island but were due to the infection in the s.s. *Torridge* which arrived in Colombo harbour. The malarial cases occurred in two distinct and serious epidemics, to inquire into which a commission was appointed. Many insanitary areas favourable for the breeding of mosquitoes were found. Dysentery supplied 2111 cases with 478 deaths, the total number being considerably less than in 1903. In regard to leprosy it is noted that Dr. Rost's leprolin serum was used "with very satisfactory results in three cases." Sir Allan Perry avows himself a follower of Mr. J. Hutchinson in the belief that parangi or yaws is syphilis and states that his officers have been instructed to treat these cases more rigorously with antisyphilitic measures. It will be interesting to note in the next report the results of this measure. The report of Dr. Aldo Castellani is an especially interesting one, embracing as it does sections on the various bacteriological examinations carried out during the year. The portion dealing with typhoid fever is very complete; his remarks on the great value of Widal's reaction and on the bacteriological examination of the stools and the urine and the search for the typhoid bacillus in the blood are full of interest. Dysentery also has been investigated by this observer most thoroughly and he has prepared a polyvalent vaccine for dysentery and para-dysentery which is harmless and which, although not advisable for use in ordinary circumstances, might be useful in the case of a severe epidemic. Dr. Castellani prepares the anti-dysentery vaccine in peptone water. The blood of the inoculated person agglutinates the bacillus dysentericus of Kruse from 24 to 48 hours after the inoculation; the immunisation passes off in a few weeks. Dr. Castellani also determined the presence of three forms of dysentery; he found that ipecacuanha had no effect on the amœbic variety. The results obtained from the surgical operations performed were highly satisfactory, especially in the General Hospital, Colombo. In all there were 2733 operations, with only 46 deaths. Of these the Colombo Hospital contributed, under Dr. F. T. Garvin, 600 operations, with only 15 deaths, or a mortality of 2·5 per cent. His list includes several interesting cases, such as amputation of the hip by the Furneaux-Jordan method, for compound comminuted fracture of the femur with subsequent necrosis, the patient making an excellent recovery. He also reports a remarkable case of chronic intestinal obstruction where fæcal matter had not been passed for a fortnight. Left inguinal colotomy was performed. The patient at the time of the writing of the report was still in hospital but his recovery seemed to be assured. Space forbids us to enter more fully into this valuable report which reflects the greatest credit on all concerned in the medical and surgical work of Ceylon.

## JOURNALS AND MAGAZINES.

*School*.—In the March and April numbers of *School* Mr. Sydney F. Walker describes in much detail various systems of warming and ventilating school buildings. After a brief explanation of the terms combustion, radiation, convection, and latent heat and of the production of draughts in rooms he gives particulars of a modification of the time-honoured open fireplace. In this the whole of the lower part of the chimney and the hearth is formed of glazed tiles, the bottom of the grate being raised from the floor, with an air space beneath. The hot gases and smoke from the fire pass up an iron flue inside the chimney, while air brought from outside the room is carried over the flue, the warmed air being delivered into the room just below the chimney breast. This arrangement provides a supply of warmed air constantly passing into the room. Hot-air furnaces are briefly mentioned and the danger of fire in connexion with them is noted. Heating by gas, either with the ordinary illuminating flame or with the Bunsen flame, is next taken up, after which come stoves containing a supply of coke or anthracite in a hopper from which the fire is automatically replenished. With regard to oil fuel Mr. Walker says that a good oil stove by a good maker, when properly attended to, is very useful. Heating by hot water circulating in flow and return pipes is then discussed and is said to be much the best for small areas. Where there is a steam-engine on the premises the waste steam from it may be used very economically for heating purposes and steam heating has the advantage that steam may be carried for a considerable distance in comparatively small pipes. Steam, however, may overheat the radiators through which it passes and cause an unpleasant smell by its action on dust lodged there.

*Man*.—In the April number of *Man* Dr. W. L. H. Duckworth gives a description, with four photographic views, of an artificially deformed adult skull found in Sarawak, Borneo, and now in the anatomical museum of the University of Cambridge. Mr. C. H. Read writes on the study of anthropology at the Universities of Oxford and London, expressing much satisfaction at the establishment at the former university of a diploma in anthropology.

## STANDARDISATION OF DISINFECTANTS.

IN October, 1903, the Council of the Royal Sanitary Institute appointed a special committee, consisting of Mr. A. Wynter Blyth, Dr. C. Childs, Lieutenant-Colonel R. H. Firth, R.A.M.C., and Dr. Samuel Rideal, to inquire into the desirability of establishing a standard bacteriological method for determining the efficiency of disinfectants. The following additional experts were subsequently added to the committee: Dr. F. W. Andrewes (St. Bartholomew's Hospital), Professor Sheridan Delépine (Manchester), Mr. Walter Hills (representing the Pharmaceutical Society), Dr. E. Klein (St. Bartholomew's Hospital), Dr. Allan Macfadyen (Lister Institute of Preventive Medicine), Dr. James Ritchie (Oxford), Professor C. Hunter Stewart (Edinburgh), Professor G. Sims Woodhead (Cambridge), and Colonel J. Lane Notter, R.A.M.C., chairman of Council, *ex-officio*.

During the last two years this committee has held a large number of meetings to consider the question referred to it and numerous experiments have been carried out under the direction of the committee to aid the committee in coming to a decision. In the Journal of the Institute, vol. xxvii., No. 1, is published a report of experiments made on behalf of the committee and submitted to it by Colonel Firth and Dr. Allan Macfadyen, and it is proposed to publish in No. 5 a contribution from Professor Delépine on the "thread method."

The following report of the committee has been approved and adopted by the Council:—

*Report of the Disinfectant Standardisation Committee.*

1. The committee are of opinion that no one method of testing disinfectants can indicate their relative values under every possible condition. These must be specially determined for the given case required, and where penetration is important a "thread method" is indicated.

2. For general purposes, on account of its simplicity of working, the committee recommend the "drop method" as described in the *Journal of the Royal Sanitary Institute*, vol. xxiv. (1903), page 424.

The test to be carried out with pure broth cultures of the bacillus typhosus, using sterilised distilled water as the diluent of the disinfectant.

All nutrient broth to have a constant reaction of + 15.

Where special conditions exist which may interfere with the activity of the disinfectant the consumer should be advised to call for the same conditions to be embodied in the test.

(Signed) A. WYNTER BLYTH, Chairman.

April 9th, 1906.

# Looking Back.

FROM

## THE LANCET, *SATURDAY*, April 26th, 1828.

### LONDON MEDICAL SOCIETY.

April 21, 1828.

Dr. WILLIAMS in the Chair.

THE important nature of the subject brought before the Society this evening, produced a very full attendance of the members.

DR. CLUTTERBUCK pointed out, in a forcible manner, the disadvantages and impediments which at present exist in the cultivation of the science of anatomy; he observed, that at the time he was a pupil, subjects could be procured at the price of two guineas; whilst at the present time, twenty guineas, or more, are paid, and the bodies are obtained with the greatest difficulty. The consequence of this, Dr. Clutterbuck remarked, is, that students, with limited means, omit the study of anatomy, whilst others go abroad, where subjects are readily procured, and at a cheap rate. The worthy Doctor concluded by moving, that a petition which had been drawn up by the council, and intended to be presented to the Commons, should be read. .....[1]

At the conclusion of the evening, a kind of conversational debate ensued, on the best means of supplying the schools of anatomy with subjects.

Mr. S. WRAY stated, that it was his conviction, Parliament would give no remedy, and that medical men should themselves set an example, by giving up their own bodies for the purposes of dissection, and thus Mr. Wray argued, the way would be paved, as it were, towards diminishing the prejudices of the public.

Mr. LAMBERT met these opinions by observing, that the notion of medical men giving up their own bodies, which had been trumpeted forth through many of the public papers, arose from a mistaken and narrow view of the subject. It was admitted on all sides, that no injury is done to the person dissected; the only injury committed, being upon feelings of the relatives, or friends, of the deceased; hence, the proposition was self-evident, that if the person submitted to dissection, had no friends or relatives, then no injury was sustained. He, Mr. Lambert, was perfectly willing that his body after death should be dissected; but he could not forget, that there were those near and dear to him, whose feelings would be outraged, and this injury he had no right to inflict. Mr. Lambert further remarked, that the annual amount of unclaimed bodies in the metropolis, as could readily be proved, would amply suffice for the supply of the anatomical schools; this appeared to him the only means that could possibly be adopted; to talk of diminishing the prejudices of surviving relatives, was, in his estimation, idle.

Mr. KINGDON concurred with Mr. Lambert, with respect to dissecting unclaimed bodies; but, at the same time, he thought the public feeling might well be consulted, by making it compulsory, as in France, to give Christian burial to the remains of the bodies, after the purposes of dissection had been served.

[1] The wording of the petition and some discussion relating thereto which fill up this lacuna have not been transcribed.

# THE LANCET.

*LONDON: SATURDAY, APRIL 28, 1906.*


## The Apathy of Londoners with regard to their Hospitals.

IT would be difficult to overstate the service done to the hospitals of London by members of the Royal Family, a service attested over a series of years and most recently by the report of the proceedings at the annual meeting of KING EDWARD'S Hospital Fund for London. Even in the course of his progress through India the PRINCE of WALES, in his letter read by the Duke of FIFE to the same meeting, shows that he had in full remembrance the details of the work done by KING EDWARD'S Fund and shared the confidence inspired by the work on the income of the year. For from the point of view of the Fund as a money collecting agency these results are most encouraging. The Fund received in the course of 1905 no less than £361,068. The larger share of this, it is true, represents money meant to be invested, but Lord ROTHSCHILD said, in submitting the accounts to the meeting, that they might take £123,862 as representing the normal annual receipts and that this was some £20,000 in excess of the expenditure. The eloquence of such figures seems unanswerable, the more so as they imply confidence all round. We cannot but admire the energy and persistence shown by the League of Mercy, represented ably by Sir WILLIAM COLLINS, which in the same year raised by its laborious methods £15,000, a thousand more than in the previous year, and which in the seven years of its existence has contributed to the Fund no less than £61,000. The League of Mercy is supposed to deal with the poorer sort of givers, from whom it is scarcely reasonable to expect much in the way of help. After all it is on the rich and the comfortable that voluntary hospitals must rely if charity itself is not to fail and our vaunted civilisation not to be discredited. Men like GUY should be plentifully forthcoming in this age if we are not degenerating in *morale* and in true and reasonable care for others. It is a hopeful sign that the KING and his heir give proof that it is possible to be surrounded with luxury and yet most sympathetic with the humbler classes whose life problems are complicated with grave sickness or accident.

It may well be gratifying to those in charge of this successful Fund that many of the rich cast subscriptions into their treasury, bringing the income for the year up to the handsome sum already named and enabling investments to be made which will secure to the Fund henceforth a permanent income of £50,000 and an annual distribution of over £120,000. The munificent gift by Lord MOUNT STEPHEN of £200,000—the second of its proportions—is worthy of special mention. It raises our conception of what might happen any week in the way of relief to anxious hospital authorities if his example should become infectious. And we see no reason why it should not become so, while every argument in favour of such munificence becomes daily stronger. For we must not forget in this just praise of what has been achieved by KING EDWARD'S Fund and its sister funds, the Metropolitan Hospital Sunday and Saturday Funds, that with all their growth and success the cry for help from almost every hospital becomes weekly more anxious and acute, implying a burden which threatens to become intolerable and to imperil the voluntary system of hospital support which has hitherto been little less than a national glory. Adverse balances at the bankers and over-drafts and irksome mortgages seem to multiply at the hospitals even while the great central funds report year by year an increasing income. The problem is something like the fiscal problem of the nation—a constant report of expanding trade and national income on the one hand, with a constant complaint of increasing impecuniosity on the part of the majority of the nation on the other. It is only necessary to read the advertising columns of the newspapers or to study the reports of individual hospitals to see how general and how acute is the difficulty experienced by treasurers and committees of voluntary hospitals in making ends meet. And it is only justice to the executives of the great hospital funds, which supply approximately £200,000 a year to our metropolitan hospitals, to say that they fully recognise the fact that with all their success individual institutions are more and more embarrassed. But this fact, so plain and so ominous for our readers who know the circumstances, must escape the knowledge of the average Londoner, or how shall we account for his apathy? For which reason we are grateful to the Duke of FIFE for speaking very plainly at the annual meeting of KING EDWARD'S Fund upon this exact topic. "There is one thing," he said, "which nothing seems able to overcome, and that is the apathy of Londoners with regard to their hospitals. The great majority of them do not subscribe and the plain truth is that the London hospitals are maintained by a small number of charitable people."

The facts justify this plain and powerful speaking. The charge of apathy is one not to be made lightly, but neither is it one to be resented lightly or to be refuted jauntily. That it can be made upon fair grounds is indeed an unpleasant fact in the midst of our luxurious and comfortable civilisation. There must be few in the middle classes and practically none in the upper who could not make a substantial contribution to the hospital treasury. That they do not is due, we think, not so much to want of sympathy as to want of thought. They do not see the sick and wounded. Nurses and hospital surgeons and physicians contend with the worst afflictions—physical, mental, and moral—that can fall upon suffering man every day and all day. But the hospital screens their labours too effectually from the view of those who are in health and comparative wealth and on whom the responsibility of assisting their less fortunate brethren really lies. No doubt amongst these non-subscribing thousands there are many latent Samaritans, but because they do not see the misery of the hospital patients or the beneficent work done for its removal, they allow themselves to fall as part of "the great majority of Londoners," under the charge of apathy. We should gladly welcome conference

between those who have done so much for all the hospitals and those who in quieter ways bear the responsibility of individual hospitals, and we should like the results of such coöperation made public, so that those who now pass by on the other side might be moved to give their aid. Apathy in any form, either in those who can give or in those who can administer, is a sin of the first magnitude. There is need for all gleaners in this field. The failure of the voluntary principle to support the London hospitals would be, we consider, a metropolitan disaster and disgrace; it would mean the loss of one of the most binding and healing forces in a huge community which has too many elements of misery and discord.

## Tuberculous and Unclean Milk.

THERE is at the present time a distinct indication that public opinion is awakening from the condition of relative torpor into which it was lulled by the unfortunate statement of Professor KOCH in 1901 when he alleged, as the result of a very limited series of experiments, that the danger to the human species from the consumption of tuberculous bovine milk was so small, if it existed at all, that he deemed it unnecessary to take any precautions against it. This expression of opinion, notwithstanding the counterblasts which accompanied it, exercised a distinctly inhibitory effect upon the steps which up to that time were being taken against unwholesome milk in general, there being, strangely enough, after Professor KOCH'S expression of opinion, an inexplicable tendency to assume that tuberculosis was the only disease which had to be taken into consideration as regards the supply of milk. There can, however, be no longer any doubt that whatever may be the precise degree of danger to be anticipated from the consumption of large numbers of tubercle bacilli in the quantities of milk consumed by children and invalids such danger is a real one, and there are those who believe, as a result of recent experiments, that much of the tuberculosis of adults has its origin in a milk-borne infantile infection which remains latent until, by adverse circumstances of poverty or age proclivity, the human soil becomes so altered as to enable the parasite to grow and to manifest its dire effects. But however this may be, it is possible that the recent experimental work which has shown how easily in certain animals the tubercle bacillus may reach the bronchial glands *viâ* the intestines and the mesenteric glands without leaving in these latter any trace of its passage will render everyone capable of estimating danger disinclined to feed their offspring or even their invalids upon tuberculous milk. It is, therefore, not very reassuring to learn from the reports of Dr. WILLIAM COLLINGRIDGE, the medical officer of health of the City of London, that at least 8 per cent. of the milk sold within the City limits is derived from animals affected with tuberculosis. This fact is not, he adds, matter for surprise when it is remembered that out of 500 cows examined, after slaughter, by the city veterinary inspector some evidence of tuberculosis was found in no less than 46·8 per cent. From among 25 samples of milk quite recently examined two were found by Dr. KLEIN to be tuberculous. As regards the first of these the company to whom the milk was consigned at once discontinued the supply and caused the cows furnishing the milk to be examined by a veterinary surgeon who reported that all, "with the exception of five which have been turned away as showing suspicion of induration which may be tubercular or otherwise," were apparently healthy. In view of this we are glad to be able to record that the company in question arranged for a periodical inspection of the cows. As regards the second sample the veterinary surgeon reported that one cow "is suffering, in my opinion, from tuberculosis of both hind-quarters of the udder." Instances of this nature could be multiplied from the experience of other large towns which have obtained what are known as the Manchester milk clauses but we have said enough to indicate the importance, and indeed the necessity, of the bacteriological examination of milk and the periodical inspection of milch cattle. And altogether apart from tuberculosis there is the very obvious danger to be anticipated from a polluted milk of the conveyance of such diseases as infantile diarrhœa, sore-throat, diphtheria, and scarlet fever, as well as obscure conditions likely to arise from the careless addition of preservatives.

The establishment of numerical bacteriological standards for milk is no doubt a matter of considerable difficulty and we wish at this moment to insist more particularly upon the absolute necessity for cleanliness. In this direction we find ourselves able to derive support from a paper recently read before the Farmers' Club by Mr. F. J. LLOYD, F.C.S., F.I.C., upon the Relation of the Medical Profession to the Dairy Industry. This paper contains certain criticisms of the views of our profession which we do not propose to discuss further than to say that Mr. LLOYD has not thoroughly mastered this portion of his subject. We prefer to devote our space to the points on which we are in agreement rather than to those with which we are out of harmony, since we believe that we shall by this means be best serving the cause which we both clearly have at heart. Mr. LLOYD in the first part of his paper is mainly concerned with an endeavour to prove that what may be termed the bacterial purity of milk is by no means necessary and that the instrumentality of milk in the causation of tuberculosis and infantile diarrhœa has been over-estimated by our profession. We agree, however, with Mr. LLOYD, "that milk to have its maximum value as an article of food must be drunk in a fresh and wholesome condition," and that consequently "the dairy farmer who produces it and all those who have to deal with it should leave no stone unturned which will ensure both its purity and its cleanliness." We are also cordially with Mr. LLOYD in his warning to the dairy farmers that if they wish to prevent extreme legislation they themselves must take the steps to render such legislation unnecessary. From these considerations the writer of the paper goes on to advise the elementary, but little observed, points of cleanliness of the cowsheds, of the cows' udders, and of the milkers' hands, the rejection of the fore-milk, and immediate straining and cooling of the milk in thoroughly cleanly circumstances and under conditions where aerial contamination from dust is unlikely. To these data he would doubtless add by inference facilities for the speedy and immediate transit of the milk under conditions which, so far as practicable, will maintain the temperature to which it has been cooled and which will protect

it from the dust and dirt associated with a railway journey. As Mr. LLOYD observes: "Even the dairy farmer must realise that the public have a right to demand milk free from disease germs and coming from healthy cows," and he adds that "if the dairy farmer will not take such steps as lie in his power to ensure healthy and clean milk he must not blame the medical profession if in their anxiety to protect the public health they go further than he considers justifiable."

Although Mr. LLOYD believes that the medical profession has already gone further than our present knowledge justifies he is good enough to add that in this country the profession has shown far more moderation than our colleagues in other countries and he trusts that while this moderation continues "the dairy farmer will realise the great responsibility which rests upon him to free his herds from disease and their milk from dirt." We echo these sentiments and we agree with him that it would be well for the dairyman to reckon with us while we are, so to speak, in the gate. We are satisfied with the evidence available that this elementary cleanliness which is so forcibly urged by Mr. LLOYD is not, as a general rule, practised, more especially in our rural districts, where a proposal to wash the udders of the cows and the hands of the milkers prior to the act of milking would often be greeted with derision and where the hind-quarters of the cows are not infrequently caked with filth. The cowsheds are often dark and dirty, the water supplies far from satisfactory, and the milk utensils unclean. In our own experience the rural inspector of nuisances is all too frequently unacquainted with the Dairies and Cowsheds and Milkshops Order, or the regulations, if any, which have been drawn up under this Order. A much higher standard of cleanliness is desirable in every direction and such standards should be applied with more vigour and consistency. Some intelligent supervision on the part of county councils is, in our view, eminently desirable and we would suggest that Mr. LLOYD should use his influence to promote some such supervision. But it must not be forgotten that the milk as exposed for sale in milkshops and other places is generally kept under conditions which invite its contamination by dust and that much more attention should be devoted to this aspect of the question which is, of course, largely beyond the reach of the dairy farmer.

## Cancer Cures.

THERE is an ancient legal maxim, "Ubi jus, ibi remedium," which is usually rendered into English as "There is no wrong without a remedy." We need not stay to inquire whether this aphorism will hold good universally in law. In medicine, unfortunately, the analogous principle that for every disease there is a remedy cannot be maintained at the present time, or if it be true, the remedies for many morbid conditions are utterly unknown to us. Year by year our powers of dealing with disease increase; many maladies which formerly were able to bid defiance to all our therapeutic measures are now almost completely under control. There are, however, unfortunately also many which refuse to be amenable to any form of treatment as yet known to us and probably the most striking member of this group is cancer.

It is now almost universally admitted that malignant disease is local in origin, though some constitutional condition may favour its appearance and spread. When cancer was thought to be "constitutional" in origin its topical removal by surgery was looked upon as impossible, but now that we feel sure that it is local in origin surgery can remove the disease completely if the operation be undertaken before the neighbouring lymphatic glands are involved or dissemination has occurred. At the present time, if the word "cure" can be applied to any procedure in connexion with cancer it can be applied to the early removal of the diseased tissues; but even in this case it is doubtful if "cure" is the most appropriate term to employ, for the diseased tisues have been removed and not restored to a state of health. This, however, is only a question of nomenclature and the fact remains that the early and complete removal of the cancer is at the present time the only satisfactory treatment of the disease. There remain, however, very many cases in which the complete ablation of the diseased tissues is impossible, whether from the original site of the cancer or from the extent of its spread and therefore some other method must be adopted. The attempts to get rid of the morbid growth have been many and every year sees the introduction of new remedies or the resuscitation of some already discarded. Every method is accompanied with a list of cases which have been "cured," but, alas, the results of the trial of the method by others are seldom so favourable as those first attained. Sometimes the new treatment is the outcome of theory. At one time it was imagined that cancer contained an acid and if this were so the obvious treatment would be the use of alkalies. ALLIOT in 1693 said that "the cure of cancer consists in the mollification of acids by alkalies and absorbents." Therefore ammonia was used both internally and externally and much benefit was said to have resulted. VOGEL in 1769 wrote a book called "De Curatione Cancri per Aquam Calcis Vivæ," and the results he described from the use of the lime water were excellent. The effects of chemicals on cancer cells have served to introduce some therapeutic methods. Methyl-violet was at one time used chiefly because it showed an affinity for the cancer cells as seen in sections under the microscope. BROADBENT in 1866 spoke highly of the local injection of acetic acid and the basis of this treatment appears to have been mainly the action of the acid on the cell walls and nuclei of cells on the microscopic slide, and therefore it "might be expected to do this when the cells were *in situ*." His results were certainly striking. It was suggested in 1809 by SAMUEL YOUNG that pressure might lessen the nutrition of a cancer and assist the absorption and several ingenious devices for effecting suitable compression were published. The best known of these was that introduced by NEIL ARNOTT and marvellous "cures" of cancer by these means were described but unfortunately we cannot be certain that the patients were really suffering from cancer. Recently trypsin has been recommended and one of the arguments in favour of its employment is that the secretion of the pancreas probably has a deterrent effect on the production of cancer, since malignant disease is rarely met with between the opening of the pancreatic duct and the ileo-cæcal valve—that is to say, in the part of the bowel where

the pancreatic juice is active. As it is still being employed it is yet early to express a definite opinion. Other digestive liquids have, however, been employed long ago; gastric juice is said to have been useful and papain has also been tried.

Narcotic drugs would naturally suggest themselves as useful for allaying the pain but effects which might be called curative have also been described. STÖRCK in 1761 first brought forward conium as a valuable remedy in cancer, though the drug was employed in the disease from a very early date. The drug was widely used and the most diverse opinions have been expressed as to its value. STÖRCK looked upon it as almost infallible but BAYLE decided that though it might relieve the pain and retard the progress of the disease it never cured. It is probable that the very great variations which occur in the composition of the preparations of conium may have something to do with the enormous variations in the estimations of its value. Sir EVERARD HOME had a very high opinion of mezereon and at one time belladonna had many advocates. Chian turpentine had an ephemeral reputation some 25 years ago and the failures were ascribed to the use of a false variety of the drug; it was, indeed, difficult to know what was true Chian turpentine but it is wholly disused now. Two or three years ago violet leaves achieved a sudden notoriety from the publication of a remarkable case in which the growth had been examined microscopically and had been declared to be malignant by a competent authority. An infusion of the leaves was used both externally and internally. Other cases have been described in which results equally satisfactory have been obtained and at the present time the infusion of violet leaves is being widely employed but in many cases it does not seem to have had the slightest result. The close nervous association between the genital organs in women and the breasts, as shown by the enlargement of the breasts after childbirth and the involution of the breast which follows the cessation of menstruation, suggested to Dr. G. T. BEATSON the possibility of removal of the ovaries controlling the growth of a carcinoma of the breast and a large number of cases has now been recorded, in some of which marked improvement or even disappearance of the tumour has occurred, and as many of the cases were instances of inoperable recurrent growths, in which there had been a microscopic examination of the primary tumour, the value of the observations is great but the more carefully the cases are investigated the smaller is the proportion in which improvement has occurred. Cancer has been ascribed both to too much salt and also to too little salt in the diet; nevertheless, the injection of sodium chloride has been said to do good. Of external remedies the number is great. We need say little of real caustics, such as arsenic, for if sufficient tissue is destroyed the disease may be removed; but belladonna, lead, mercury, and iodine seem to have had the greatest reputation. Substances so inert as silica and animal charcoal have been declared to be capable of "curing" cancer. Toads have been applied externally and many other remedies as strange have been highly recommended. In 1781 a Mexican physician, FLORES, advised the administration of the flesh of the grey lizard but BAYLE had a patient who swallowed more than 400 grey lizards within two months and yet received no benefit. In these latter days light rays and x rays have been shown to have a very decided curative action on the superficial forms of carcinoma, such as rodent ulcer, and it is now well established that these varieties of malignant disease are curable by such means. It is of interest to note that in 1776 LE COMTE employed the rays of the sun concentrated by a lens in the treatment of a cancer of the lower lip and the growth is said to have disappeared. The value of "serums" in various diseases naturally suggested the attempt to prepare an "anticancerous serum." DOYEN described a bacillus neoformans and from it prepared an anticancerous serum, from the use of which he obtained definite improvement but other observers have failed to get satisfactory results. In THE LANCET of April 7th (p. 955) Dr. A. PAINE and Dr. D. J. MORGAN described their observations on a series of cases in which Doyen's serum was employed but in no case was any benefit seen. Dr. C. JACOBS and Dr. VICTOR GEETS of Brussels in the same issue of THE LANCET (p. 964) published a paper in which, while agreeing that Doyen's serum was valueless, they maintain that "it is practicable to immunise the human organism by means of a series of inoculations of the micrococcus neoformans vaccine provided that these are properly controlled by examinations of the opsonic power of the blood." We acknowledge the importance of this communication and await with interest the results of a further trial of the method.

In giving this brief review of the treatment of cancer we have omitted many drugs employed at one time or another but we have mentioned enough to show that many substances have been brought forward from time to time as curative of cancer and often detailed accounts have been given of the progress and improvement of the cases and yet in other hands the treatment has proved useless. To what are we to ascribe this apparent inconsistency? The chief explanation is to be found in errors of diagnosis. Even now, when we possess many aids to diagnosis which our predecessors did not have, errors as to the nature of a tumour are by no means rare. They must have been very common in the past. A chronic mastitis of the breast may be indistinguishable from carcinoma until cut into or even until a section has been examined microscopically. We can hardly imagine that pressure could cause the absorption of a true scirrhus of the breast and we are forced to believe that the cases in which the use of ARNOTT'S pads was followed by disappearance of the tumour were in reality cases of chronic inflammation of the breast. Another factor in the production of the curious history of cancer cures is the irregularity of the course of cancer. Though as a rule a malignant growth steadily progresses to a fatal issue, cases are seen in which the diagnosis has been indisputable and confirmed by microscopic examination, yet for some unknown reason the extension of growth ceases, to be replaced by atrophy, and sometimes even the whole mass may disappear. This has occurred even when no treatment has been employed. If, however, there has been administered any drug at the time when the growth has diminished that drug will surely get the credit of the improvement and in this way the reputations of many drugs have been made. We must

from a careful consideration of all the facts be led to the conclusion that in the vast majority of recorded cases where malignant growths have been said to be cured the growth was not cancerous, but we must express our dissent from the view maintained by some that the disease in all such cases was not really malignant because it was "cured." We have hope in the future. The discovery by Professor JENSEN of an inoculable form of malignant disease in mice has made it easy now for us to try the effects of remedies in a way which was impossible when we were limited to cases occurring in human beings. We think that by this discovery Professor JENSEN has done much to further the advance of the study of cancer and we heartily approve of the action of the Royal College of Surgeons of England in according to him the Walker prize. Not merely, however, in the cure of cancer when it exists but in the prevention of the disease the greatest future advance will lie.

# Annotations.

"Ne quid nimis."

## THE METROPOLITAN WATER BOARD AND THE CONTAMINATION OF THE RIVER LEA.

THERE has been considerable speculation amongst water experts during the week as to the reasons which have led the Metropolitan Water Board to drop its Bill providing for the better protection of the water-supply drawn from the river Lea. It would appear that the Water Board contemplated in its Bill the removal of one of its intakes from the Lea to a point higher up the river, a step which seemed highly desirable owing to the increasing volume of sewage which was poured into the river from the town of Hertford above the old intake. The supply of water taken from the river below the sewage outfall amounts, it is stated, to 32,000,000 gallons per day, while the Hertford sewer discharges about 2,000,000 gallons of crude sewage per day into the river above this point. These figures and statements if true are not calculated to inspire the confidence of the consumers living in the Eastern districts of the metropolis in the quality of the water supplied to them. On the contrary, a feeling of alarm may very justifiably arise, especially as it is common knowledge that the Metropolitan Water Board must have realised the seriousness of the situation or it would not have promoted a Bill dealing with it. The alarm is not likely to subside now that it is announced that the Lea Valley Bill has been withdrawn. We understand that the subject will be discussed at the next meeting of the Board and it is to be hoped that the reasons given for the withdrawal of the Bill will be reassuring to the public. Meantime it is conjectured that an alternate scheme has been proposed which possibly provides for the diversion of the stream of sewage discharged from the Hertford sewer. It is also stated that the Water Board is seriously considering the scheme promoted some years ago by the London County Council for obtaining a supplementary supply of water for London from the Welsh hills. But obviously such a scheme cannot meet the immediate needs of the situation as regards the alleged pollution of the river Lea above the Water Board's intakes. We may point out that this source of pollution of the water-supply derived from the Lea by the old East London Waterworks Company was referred to in the articles on the London water-supply which appeared in THE LANCET in 1897; the state of the sewage effluent is described there as varying considerably. Sir Alexander Binnie has given it as his opinion that a time would come, if the present state of things continues, "when there will arise among the teeming millions of London an epidemic which will startle the world" and compared with which the scope of previous outbreaks of water-borne epidemics will pale into insignificance. These are very strong words and seem to us to warrant a very searching inquiry into the real facts of the case. We have again and again pointed out that though the actual volume of the water provided by the Thames and the Lea may meet the existing needs of the metropolis for drinking purposes it must not be forgotten that year by year the strain put upon these rivers as channels for the disposal of sewage effluents is increased and the risk of pollution consequently is greater.

## THE PLACE OF CRIMINOLOGY IN THE CURRICULUM OF LEGAL EDUCATION.

THE conflict between medical and legal opinion with regard to the criminal responsibility of the insane, which a few years ago was wont to give rise to so much acute and often acrimonious controversy in the Courts of Justice, has in our days ended in what may not unfairly be claimed as a full though tacit acceptance of the views of medical science. The crude psychology which inspired the M'Naughten rules, if it has not been explicitly repudiated, has at all events been abandoned in practice; and in criminal cases nowadays there is little fear that expert evidence of the fact of mental disease will be discounted on the score of any obsolete test of responsibility. But while this change of attitude is very satisfactory so far as it goes, it would certainly be rather rash to assume that it is the result of any profound knowledge and appreciation of the teachings of modern psychiatry and that the legal mind is so well informed on all that relates to the scientific study of the criminal that it will be able to give an unprejudiced consideration to the practical suggestions which may be founded on that study in the near future. It is to be feared that this permeation of the law by the modern spirit is still an ideal the realisation of which is somewhat remote and only attainable through strenuous efforts in which the medical profession must zealously coöperate. On this account peculiar interest attaches to the noteworthy example recently set us by our Gallic neighbours who have formally introduced the study of criminology into the curriculum of legal education. By a decree of the Council of the University a course of instruction in criminal anthropology, mental diseases, legal medicine, and cognate subjects has been instituted in the Paris Faculty of Law. The course will extend over two terms and will comprise lectures delivered by the professors in the faculties of law and medicine, supplemented by clinical instruction. Attendance on the course will be recognised, after the usual examination tests, by the granting of a *certificat d'études de sciences pénales*. In view of the generally hostile attitude hitherto adopted by the French magistracy to the ideas of the criminologists this step is of very great significance. Nor, it may be remarked, is the tendency which it indicates confined to France. In the University of Berlin a series of lectures on criminal anthropology has just been inaugurated and, though not in any formal connexion with the faculty of law, must exercise a considerable influence on legal opinion. Of course, the method of procedure in criminal cases in France, which demands of the *juge d'instruction* a good deal of insight into the criminal temperament, makes the need of such a system of training more apparent than it is in England. Such differences, however, as arise from this cause are relatively slight and superficial and do not affect the fundamental factors of the question, which are essentially the same in all civilised countries. It is, therefore, to be hoped that when the long-talked-of reorganisation of

legal education in England eventually takes place something on the same lines will be established here and that it will be recognised as absurd that men should be called upon to judge of the quality and motive of diseased conduct who have never been trained to the study of morbid thought and action in the wards of the prison and the lunatic asylum. It is not to be denied, however, that in this country, at all events, there exists a feeling among those who have had practical and personal experience among criminals that there is some risk of overdoing "criminology" as a subject of education. This risk attaches more especially to the application of general results to individual criminals, but the question is one which it is desirable to follow out in the hope that lawyers and medical men may be able to bring their divergent opinions into greater harmony with each other.

## THE TREATMENT OF RECOVERABLE CASES OF INSANITY.

IN the management of cases of mental disorder in which the prospects of recovery are favourable the general practice would probably be correctly described as based upon the principle of as little interference as possible, incidental symptoms only, such as insomnia, violence, and refusal of food, being treated. The general practice may, in fact, be compared to that adopted in the case of maladies such as the specific fevers which must be allowed to run their course. On the other hand, there are not wanting those who advocate and employ methods which aim directly at cure. The relative merits of "expectant" and active methods of dealing with the cases in question are capable of demonstration by means of a comparative trial. In a pamphlet which we have received and which is entitled "A Plea for the more Energetic Treatment of the Insane" the author, Mr. Charles Williams, whilst disclaiming any desire to reflect upon asylum physicians, nevertheless considers that they as a class are deficient in the quality of zeal. There are, he contends, various methods by which at any rate some small addition to the recovery-rate of asylums might be made but this does not appear to be considered worth having. Amongst the methods instanced are the treatment by thyroid extract, electrical treatment in various forms, the prolonged warm bath, the Turkish bath, suggestion and the production of some somatic disorder which would favourably influence the course of the mental disease. Some of these methods lend themselves to adverse criticism. There are others which, whilst not mentioned in this pamphlet, are in good repute. A perusal of modern treatises upon insanity in which we find advocated various methods calculated to bring about cure or to hasten recovery in recoverable states does not support the view that recoverable cases are best left to nature and the nurse, though the convincing proof which a comparative trial of the kind we have suggested would afford is not furnished. Such a study, however, may well raise a doubt as to whether the average conditions under which the work of our public asylums is done are likely to foster that zeal which is the basis of all achievement or are compatible with the prosecution of research, the elaboration of methods of treatment, and the application of these with thoroughness in individual cases. The erection of "acute hospitals" for the treatment of recent and hopeful cases in certain rare instances at public asylums is evidence that such a doubt is legitimate. But whilst the motive which actuates such a development in a county asylum is admirable and the plan itself an advance on the average conditions, the asylum is still an isolated community and subject to the disadvantages in respect of scientific progress which isolation in no small degree connotes. The opinion is, and has for some time been, held by many able workers in the department of psychological medicine that such progress is most likely to accrue from the association of wards for mental cases with ordinary hospitals wards, an arrangement by which it is contended that collaboration would be facilitated and the advantage of laboratories for various branches of research work insured to the worker in the special department; whilst his activities would be stimulated by the presence of students and his output largely increased by the assistance of zealous clinical clerks working under his directions.

## THE CLOTHES BRUSH.

THE brushing of dusty clothes in the living rooms of the household is opposed to cleanly sentiment, apart altogether from the evil to health which, as the bacteriology of dust distinctly indicates, might easily be caused by the process. The imagination does not require to be stretched very far to realise that the clothes brush might be easily responsible for the dissemination of disease. Dust is rarely, if ever, free from micro-organisms and amongst them pathogenic entities have been recognised. Dust is, in fact, an enemy of the human race, a vehicle of disease, and should everywhere and on every occasion, however trifling, be prevented as far as means can be employed to that end. The clothes brush is a vigorous dust-producing agent and since its application is indispensable it should be used in a manner as far as possible consistent with hygienic requirements. Clothes, of course, must be brushed just as carpets must be beaten but both processes create a nuisance which is different not in kind but only in degree. Just, therefore, as there are grounds reserved for the beating of carpets remote, as they should be, from human habitation, so also ought there to be in a household conducted on hygienic lines a special room relegated to the brushing of clothes. Enthusiastic sanitary reformers would, no doubt, suggest that provision might also be made for trapping the dust by some such simple measure as suspending a damp sheet across the room. The daily clothes have a large capacity and a singular affinity for dust which may contain the seeds of a common cold or a sore-throat or even of blood poisoning and tetanus, so that the suggestion that the clothes brush should be handled in a less indiscriminate way than is usually the case can hardly be regarded as chimerical. If dust has been proved to be pathogenic the scattering of it broadcast by means of the clothes brush must be a violation of hygienic principles. The brushing of clothes is, in fact, a clumsy and an insanitary procedure which might with advantage be superseded by some more effectual and less offensive method. The use of some kind of vacuum brush for the purpose would, sanitarily speaking, be ideal.

## SOME RECENT ADDITIONS TO THE MATERIA MEDICA.

THE *Journal de Pharmacie et de Chemie* gives particulars of two new preparations of iodine which may prove of therapeutic value. It has been suggested by M. Chassevant that chloroform has advantages over alcohol as a solvent of iodine. The 10 per cent. solution when applied to the skin causes a brown stain which is less persistent than that produced by tincture of iodine. It does not cause desquamation, even in concentrated solution, or itching, or dermatitis, as is so often the case with alcoholic preparations of iodine. When applied in this manner iodine is readily absorbed and may be detected in the urine ten minutes after the solution has been applied. It is thought that iodine exists in solution in different allotropic forms, the chloroformic solution being violet in colour and the alcoholic solution brown. M. Chassevant considers the chloroformic solution to be the most suitable preparation for the internal administration of the drug. A new preparation of iodine

for internal use has been devised by M. Vaudin. It is prepared by treating maisine, an albuminoid principle contained in the gluten of maize, with iodine. The product, iodomaisine, is a yellowish, hygroscopic substance, soluble in water and having a bitter taste. In daily doses of from 10 to 12 centigrammes it is easily tolerated by the stomach and has given beneficial results in emphysema, tertiary syphilis, and in other cases where the internal administration of iodine was indicated. The composition and uses of several new medicinal substances have been described in a recent number of the *Bulletin des Sciences Pharmacologiques*, including apocodeine hydrochloride, palladium chloride, aldol, malonal, and salene. Apocodeine hydrochloride is a yellowish powder, soluble in water, and is given as a laxative in place of codeine phosphate. It may be administered in doses of two cubic centimetres of a 3 per cent. solution. Palladium chloride, a brownish-black substance, soluble in water, is given in pulmonary tuberculosis in doses of from five to ten drops of a 3 per cent. solution. Aldol, an aldehyde alcohol, is a colourless liquid with an agreeable taste and a characteristic odour. It has been employed as a hypnotic. Malonal (diethyl-malonyl-urea) has been introduced for the same purpose. Salene is the name given to a mixture of the ethylic and methylic esters of salicyl-acetic acid. It occurs in white, odourless crystals, soluble in alcohol and in a mixture of olive oil and chloroform. It is used as a liniment in cases of lumbago and acute or chronic rheumatism, the solution being rubbed on the painful parts two or three times a day.

## THE HEROISM OF THE MAN OF SCIENCE.

IF "Peace hath her victories" she has also her heroes, and the same may be said of science—never more impressively than in the day now passing. The Roman legionary who was found dead at the sea-gate in the Pompeii of A.D. 79, "waiting for orders to leave," has had his counterpart in the director of the Osservatorio Vesuviano, Dr. Vittorio Raffaele Matteucci who, when the recent eruption was at its worst and the whole countryside had fled in panic, remained on duty taking his observations and carefully registering them in the interests of science and, in the last resort, *pro bono publico*. Fortunately his life has been spared though not without physical lesion and his report of a volcanic convulsion, in some respects unprecedented, will shortly be available for his fellow workers in the same field of nature study. Heir to an honoured name in electrobiology, he was born 46 years ago at Sinigallia on the Adriatic and graduated at the University of Naples "in studiis naturalibus," subsequently devoting himself specially to "petrografia" and "vulcanologia" at the University of Heidelberg. On his return to Italy he entered immediately on investigations into the "osservazioni Vesuviane" which were to be his life-long task, fearlessly approaching the crater in its angriest moods and once, indeed, so injured in the knee by a "bomba volcanico" that he was lame for a considerable time. When four years ago he succeeded to the post of "Direttore dell' Osservatorio Vesuviano" and took up his abode on the ridge of the mountain, he showed himself worthy of his great predecessor, Professor Palmieri, whose work went on unperturbed amid showers of pebbles and ashes till on one occasion every pane of glass was broken in the Observatory which rocked to its foundations. Fortunate, like Palmieri, in his assistants Dr. Matteucci has for three years been ably and intrepidly reinforced by Dr. Di Paola, his right-hand man, by Dr. Cassorio, the next in command, and by the chaplain, Don Saverio Formisano, who, with four serving-men, complete the working staff. He also holds a lectureship in the University of Naples and enlists so many enthusiastic students in his special subject as to encourage the hope that seismology, still in its infancy, may before the century is much older give up its secrets to the researches now proceeding apace in the many volcanic or earthquake-visited regions of the old and the new worlds.

## CHARING CROSS HOSPITAL POST-GRADUATE LECTURES.

POST-GRADUATE lectures dealing with general medicine and surgery have been given at Charing Cross Hospital for some 15 years. The lectures have been delivered on Thursdays only but the authorities have now decided to add Mondays as days for the delivery of lectures on special subjects. The summer course of the current year will commence on Monday, April 30th, with a lecture by Dr. James Galloway on a dermatological subject. On Thursday, May 3rd, Dr. H. Montagu Murray will lecture on a medical subject. The lectures will commence at 4 P.M. and will continue on Mondays and Thursdays from April 30th to July 5th inclusive. The full programme will be found in our advertisement columns of this week and a notice of the lectures will appear week by week in the "Diary." The fee for the full course is two guineas, or for either day singly one guinea. Practitioners wishing to join the course should communicate with the Honorary Secretary, Post-graduate Course, Charing Cross Hospital.

## HÆMOPHILIA IN THE NEWLY BORN.

IN the *American Journal of the Medical Sciences* for March Dr. R. C. Larrabee has published an important article on the rare condition of hæmophilia in the newly born. Uncontrollable hæmorrhage in the newly born is seldom due to hæmophilia and appears to be generally due to some infection. Many organisms have been found at necropsies or in the blood during life. These include staphylococci, the streptococcus, the pneumococcus, bacillus pyocyaneus, the bacillus lactis aerogenes, and the bacillus coli. The course of the disease resembles that of an acute infectious disease and outbreaks have occurred in hospitals. So much attention has been lately given to the infectious origin of hæmorrhage in the newly born that the possibility of its being due to hæmophilia has been to a certain extent overlooked. Some writers have even denied that hæmophilia ever occurs in the first few days of life. No doubt it generally begins in later childhood but there are exceptions. In 1872 Grandidier collected 228 cases of spontaneous umbilical hæmorrhage and of these 14, or 6 per cent., occurred in hæmophilic families. Dr. Larrabee has been able to collect 37 cases of hæmophilia in the newly born. These include one observed by himself as well as those collected by Grandidier. No case was accepted as one of hæmophilia unless there was a family history of the disease or unless the child survived and in later life was a "bleeder." The 37 cases occurred in 24 families. 22 of the cases were fatal—a mortality of 60 per cent. The sex incidence was according to the rule in hæmophilia: out of 33 cases only six patients were females. On the other hand, in the cases in which the hæmorrhage was due to infection the sexes were about equally divided. The most common site of the hæmorrhage was the umbilicus or umbilical cord (23 cases, in 19 of which this was the only site). Other sites were the skin (seven cases), the nose (six cases), the bowel (four cases), the joints and genito-urinary tract (two cases each), an operation wound, the gums, and the stomach (one case each). In two cases the site was not stated. Although several writers state that circumcision is often the cause of the first hæmorrhage Dr. Larrabee has been able to find only one undoubted case. His own case is exceptional as regards sex and the manner of transmission. A girl was born at term after a normal labour. The membranes were ruptured

artificially and in doing this a minute scratch was made on the child's head. The hæmorrhage from this was never controlled. The child weighed 5 pounds and was apparently normal. The cord was tied in the usual way but after a few hours slight hæmorrhage occurred from the cut end. This continued irregularly in spite of several ligatures. On the second day epistaxis occurred and then hæmorrhage from the rectum, the stools being large and black with some bright red blood. On the same day purple spots began to appear, first on the face. Blood came from under the finger nails and even appeared to ooze from the unbroken skin. Prostration was marked and the temperature was constantly subnormal. On the fifth day there was a copious hæmorrhage from the vagina and death soon followed. There was a family history of hæmophilia for five generations. In the first generation an ancestor of the patient emigrated from England to America in 1757; there was a tradition that his brother bled to death. He had three sons and one daughter, none of whom were "bleeders," but in the succeeding generations there were 22 cases of hæmophilia, of which 11 were fatal. However, many of these cases were merely traditional. The transmission was not according to the usual rule. Out of 15 known and well-marked cases the disease was inherited through the male in 10. Possibly this preponderance was more apparent than real, because information concerning the descendants of female members of the family was defective. Genealogies in the female line are neglected because they are not considered of much interest. It is important to bear in mind that hæmorrhage in the newly born is generally due to some infection and not to hæmophilia.

## IDEALS.

WE have received a little pamphlet bearing the heading of "Literature and Us" and consisting of two papers originally published in the *St. Bartholomew's Hospital Journal* in December, 1905, and March, 1906.[1] The "Country G. P." who is the writer of the papers is evidently a man of wide reading and of cultured tastes, two qualities which are, above all, desirable for a medical man who is as much as, if not more than, any minister of religion brought daily into contact with the naked souls of his fellow men. For any man who can rightly appreciate the thoughts, as expressed in their writings, of profound thinkers must necessarily be able better to aid those who seek him in affliction, either of body or mind, and the two are practically indissoluble, than one who is on a lower plane of thought. So we have read with great interest the "Country G.P.'s" two papers, in the first of which he gives us quotations with comments from the writings of great and good men who have dealt with the medical profession, its duties, its hardships, and its rewards. In the second paper, "Some Ideals of a Doctor," he gives us his ideal of what a medical man should be, an ideal which he confesses he has not by any means reached himself. But to have an ideal is to take the first step towards acquiring the same and all of us may find ourselves better from reading the main points of the ideal set up in this paper. Thus the ideal medical practitioner should have some definite notion in his mind of what he is going to do for his patient; he should remember that "Res est sacra miser"; he should bear in mind the aphorism—

> "Aequam memento rebus in arduis
> Servare mentem";

and should always recollect that "Him whom you have not saved while you might, that same have you killed." He should not be idle, should be temperate and tactful in all things, and when death comes to his patient he should, and often can, stay the sorrowing who are left behind, with the consolation that death is not the end. He gives various quotations upon this point and we would suggest that he should add Blanco White's magnificent and single sonnet, "Night and Death," to his list. We see that he promises a third paper—namely, "What We must Live Down"—and we look forward to this with much interest.

[1] Literature and Us, by a Country G. P.

## UNILATERAL SENSORY DISTURBANCE LIMITED TO ONE LIMB AND WITHOUT MOTOR PARALYSIS SUBSEQUENT TO HEAD INJURY.

Dr. William G. Spiller records in the *Journal of Nervous and Mental Disease* for February, 1906, a case which may be added to collected instances of disorder of sensation, sometimes amounting to hemianæsthesia and without motor paralysis resulting from a lesion of the cortex cerebri. The patient, a male, aged 38 years, was struck with a club over the region of the right parietal lobe. He was unconscious for an hour or two and for the next two weeks was unable to move the fingers of the left hand. It was not possible to say whether this inability was the result of motor weakness or of sensory disturbances. The left leg could be moved on the day following the injury and did not at any time exhibit disorders of sensation or of motion. His condition when examined nearly 18 months after the injury was as follows. Whilst there was no weakness of the left upper limb its movements were awkward; with the eyes closed he could not button his coat with the left hand; the sense of position was greatly impaired in the left fingers, as also was stereognostic perception in the left hand, so that he usually failed to name an object placed in it unless he used the sense of sight. Sensations of touch, pain, and temperature were diminished in the left hand, though to a less degree than the above. Sensation was unaffected on the left side of the face and chest and in the left lower limb. This case is further of interest as showing that disorders of sensation in connexion with cerebral cortical lesions may be confined to one limb and therefore affords evidence in favour of the belief that the area for common sensation, like the motor area, is divisible into different centres.

## THE DEATH OF M. PIERRE CURIE.

THE death of M. Curie in a street accident in Paris brings to a terribly sudden end the very brilliant career of a scientific man gifted with a remarkable capacity for original research. M. Curie was only 47 years of age, so that there seemed to be abundant opportunities still ahead of him for further applying his sagacity and energies to great scientific questions, and above all, to the mystery of the nature of things, the composition and constitution of matter, and the problem of energy. Fate decreed otherwise and his life was cut short by a prosaic accident in the street. He fell under a heavily loaded wagon and was killed instantly, the wheels passing over his neck. M. Curie's death is a terrible loss to the world of science which, it is not disparaging to others to say, could spare him least amongst its faithful followers. He enjoyed a singularly happy partnership with his wife, for she devoted herself to her husband's life work, with what great and far-reaching results the whole world knows. Madame Curie was the actual discoverer of radium and its analogues but her long, patient, and laborious investigations had the advantage of being directed by her husband. Intense sympathy will be felt for Madame Curie who has thus so suddenly lost not only her husband but a fellow worker in a companionship which gave to the world one of the most remarkable discoveries in the history of science, if not the most remarkable. What a new and immense field of exploration, with the promise of great possibilities, have the joint brilliant

researches of M. and Madame Curie opened up. The discovery of radium did indeed revolutionise scientific ideas. One of the discoverers has now been snatched away by death but his marvellous work remains, and M. Curie's name will receive homage and veneration "from one generation to another."

## PLUMBISM FROM THE ADMINISTRATION OF ACETATE OF LEAD IN MEDICINAL DOSES.

IN *American Medicine* of March 31st Dr. William Pepper has reported a case of plumbism due to an unusual cause—the administration of lead in medicinal doses. A teamster, aged 53 years, was admitted into hospital on August 28th, 1905, for chronic diarrhœa. He complained of pain in the abdomen and tenesmus. The abdomen was tense and rigid but not tender. There was a marked blue line on the gums. The urine contained a little albumin and a few granular and numerous hyaline casts. For a few days the abdominal pain was severe. After admission there was no diarrhœa and in spite of the administration of magnesium sulphate there was only one stool daily. On Sept. 15th the abdominal pain had disappeared. The patient had never handled lead or paint or, so far as could be ascertained, come into contact with lead in any form, but during the summer he had taken for diarrhœa one-grain doses of acetate of lead which was prescribed in the form of a mixture. The exact amount of lead taken could not be ascertained, but as he suffered during the summer months from severe diarrhœa with an average of about ten stools daily it was estimated that he took several drachms of acetate of lead. A similar case was previously recorded in *American Medicine* of Oct. 14th, 1905, by Dr. Arneill. In a case of dysentery he prescribed acetate of lead. It was thought that the patient took from two to two and a half drachms of acetate of lead in five or six weeks. He had a typical blue line on the gums and suffered intensely from colic, which was relieved after ten days' treatment. These cases show the necessity of caution in prescribing lead for any length of time.

## THE STERILISATION OF CATGUT.

IN an article which was published in a recent issue of the *Archives de Médecine et de Pharmacie Militaires* Surgeon-Major J. Tanton describes an inexpensive and easily carried out process which he has devised for rendering catgut permanently sterile without in the least impairing its surgical efficiency. The numberless methods suggested for sterilising ligatures which come to light every day show plainly, he says, that this question, so important to the practising surgeon, has not as yet received final elucidation. It would take up too much space, he adds, to give a complete list of these methods, and, moreover, no good purpose would be served thereby, inasmuch as the great majority of them has been abandoned. A few are left that give excellent results, but of these some are proprietary, whilst others of which the mode of preparation has been made public require special and elaborate apparatus for their production and are therefore unsuitable for small hospitals which for the most part do not possess either an autoclave or a Pasteur stove. Having on several occasions experienced disappointment when trusting to the catgut supplied from departmental sources Surgeon-Major Tanton was led to investigate the manufacture of the article and accordingly instituted a series of experiments which occupied him for more than a year. The problem at issue was the production by some simple and inexpensive process of surgical catgut whereof the sterility would be absolute, while at the same time its strength and flexibility were fully maintained. The finished article produced under these conditions was tested for upwards of a year in a military hospital in Algeria and also by a brother officer of the inventor, Surgeon-Major Folly of Koléah, the results in both cases being highly satisfactory. Surgeon-Major Tanton's method of procedure is as follows, the sterilising agent finally selected by him being iodine dissolved in acetone. The catgut of commerce must first be completely denuded of grease. To effect this the operator begins by rubbing it briskly with a pad of absorbent cotton-wool that has been steeped in ligroine. He next rolls it loosely in a single layer round small glass rods or tubes and places these in a flask of ligroine where he leaves them for about 20 days. The rods are then taken out and exposed to the air for about 24 hours or until the ligroine has evaporated. They are then placed in a 2 per cent. solution of iodo-acetone contained in a wide-mouthed yellow flask (previously sterilised by means of boiling water) which must be kept hermetically closed. After standing for a month in a dark place the rolls of catgut are transferred with sterilised pincers to a flask of 90° alcohol for storage until required. When first taken out of the iodo-acetone the catgut is hard and somewhat brittle but the spirit soon removes the excess of iodine left by the evaporation of the acetone and restores flexibility. In order to test the sterility of the iodo-acetonised catgut specimens were soiled with various cultures, including staphylococcus aureus, streptococcus pyogenes, the bacillus of Yersin, bacillus subtilis, and bacillus mesentericus, and in every case sterility was perfectly maintained. Even when trampled under foot the ligatures did not lose their neutrality. Iodo-acetone vapour irritates the conjunctiva and causes excessive lacrymation but this defect is removed by the alcohol.

A TELEGRAM from the Governor of Hong-Kong received at the Colonial Office on April 18th states that for the week ending April 14th there were 21 cases of plague and 23 deaths from the disease. For the week ending April 21st there were 44 cases and 37 deaths. At Brisbane the official bulletin of the Department of Public Health, Queensland, states that for the week ending March 17th no case of plague was notified, the last case notified having occurred on March 6th.

THE King has granted to Mr. Reginald Gower Kirton, M.D. Lond., principal medical officer of the Egyptian Prisons Administration, His Majesty's Royal authority to wear the Insignia of the Fourth Class of the Imperial Ottoman Order of the Osmanieh, which decoration has been conferred upon him by His Highness the Khedive of Egypt, authorised by His Imperial Majesty the Sultan of Turkey, in recognition of valuable services rendered by him.

THE King has been graciously pleased to sanction the following appointments to the Order of the Hospital of St. John of Jerusalem in England:—To be Knights of Grace: John Samuel Griffiths, M.R.C.S. Eng., L.R.C.P. Lond.; Ernest Laurie Robinson, M.R.C.S. Eng., L.R.C.P. Lond.; Surgeon-Lieutenant-Colonel Frederick William Gibbon, V.D.; and Surgeon-Lieutenant-Colonel Edward Cureton, V.D.

THE President of the Local Government Board, accompanied by his private secretary and Dr. E. J. Steegmann, secretary to the Royal Commission on Tuberculosis, visited on Friday the farms and laboratories at Stansted, Essex, where the research work of the Royal Commission is being carried on, with the generous coöperation of the proprietor, Sir James Blyth.

THE festival dinner of the City of London Hospital for Diseases of the Chest will be held at the Trocadéro Restaurant, Piccadilly-circus, London, on Friday, May 11th,

at 7 P.M. The Lord Mayor of London will take the chair and all communications should be made to the secretary at the hospital.

Baron Takaki, F.R.C.S., Surgeon-General of the Imperial Japanese Navy, will deliver a series of lectures at St. Thomas's Hospital on May 7th, 9th, and 11th, at 5.30 P.M., upon "The Preservation of Health Among *Personnel* of the Japanese Army and Navy" based on his experiences in the late Russo-Japanese war. The lectures will be of the greatest interest and applications for tickets should be made to Mr. G. Q. Roberts, Secretary's Office, Medical School, St. Thomas's Hospital, London.

Professor G. Sims Woodhead will give an introductory address, entitled "Past and Present: the Pathology of Skin Diseases," at the opening of the summer session at St. John's Hospital for Diseases of the Skin, Leicester-square, London, on Tuesday, May 1st, at 5 P.M.

THE President of the Local Government Board has appointed Mr. A. W. J. MacFadden, M.B., C.M. Edin., D.P.H., late medical officer of health of Edmonton, to the office of assistant inspector of foods in the medical department of the Board.

Sir William Collins, M.P., will give an address on Monday evening next, April 30th, at 8 o'clock, at the Royal Eye Hospital on "The Study of Ophthalmology; its Relation to General Medicine and Surgery."

THE annual dinner of the Pharmaceutical Society of Great Britain will be held at the Whitehall Rooms of the Hotel Metropole, London, on Tuesday, May 15th, at 7 P.M.

THE annual general meeting of the London and Counties Medical Protection Society will be held on Friday next, May 4th, at 4 30 P.M., at 31, Craven-street, Strand, London.

THE annual dinner of the Chelsea Clinical Society will be held at the Criterion Restaurant, Piccadilly Circus, London, on Thursday, May 3rd, at 7.45 P.M.

THE annual dinner of the Royal Sanitary Institute will be held in the Langham Hotel, Portland-place, London, on Wednesday, May 9th, at 7 P.M.

THE annual general meeting of the Medical Defence Union will be held on Thursday, May 17th, at 4 P.M., at the Grand Hotel, Birmingham.

VACCINATION EXPENDITURE.—At the meeting of the Tiverton (Devon) board of guardians held on April 10th it was stated that during the three years preceding the passing of the Vaccination Act the cost of vaccination in the Tiverton union was £150, whilst for the five years after the passing of the Act the fees amounted to £900.

UNIVERSITY COLLEGE, READING.—We have received the new prospectus of this college which was founded in June, 1892. The college consists of departments of letters and science, agriculture, horticulture, music, the fine arts, and commerce, and provides teaching for about 1500 day and evening students. It is affiliated to the University of Oxford and is recognised by the Board of Education as a day training college and by the Royal Colleges of Physicians of London and Surgeons of England as a place of instruction in natural science. In addition to lecture and class rooms it contains zoological, botanical, chemical, physical, and bacteriological laboratories, art studios, students' library, and common rooms. The spring term commenced on April 25th. The autumn term will commence on Oct. 24th. Full particulars of the courses of study are given in the college calendar, which can be obtained (price 1s., post free) on application to the registrar, University College, Reading.

# THE FIFTEENTH INTERNATIONAL CONGRESS OF MEDICINE.

*Held at Lisbon, April 19th—April 26th, 1906.*

THE Fifteenth International Congress of Medicine was opened in Lisbon on Thursday last, April 19th, under the patronage of the King and Queen of Portugal. The arrangements of the Congress have been made by an Executive Committee assisted by a large committee of organisation, and, as our Special Correspondents on the spot have been able to report, these arrangements have worked thoroughly well.

The President of the Congress is M. Costa Alemão, and the Executive Committee consists of the President; Professor Miguel Bombarda, the general secretary; M. Alfredo Luiz Lopes, the treasurer; M. Antonio de Azevedo, M. Mello Breyner, M. Azevedo Neves, and M. Mattos Chaves, assistant secretaries; M. Annibal Bettencourt, Professor Clemente Pinto, Professor Daniel de Mattos, Professor Ricardo Jorge, M. Silva Carvalho, and M. Zeferino Falcão. All these gentlemen were on the committee of organisation, where they were assisted by some 36 other prominent Portuguese professors and men of science.

The Congress was formally opened by the King, who was accompanied by the Queen and Queen Dowager, at the Salle de la Société de Géographie, where the section of Colonial and Naval Medicine was to hold its meetings and where a colonial exhibition of considerable interest had been organised. The representatives of no less than 24 nationalities replied to the official welcome extended to their countries, and the proceedings closed with an eloquent speech from President Ribeiro, the new Premier.

On the same evening an inaugural reception was held at the new School of Medicine, where a scanty attendance on the part of British congressists was attributed to the absence of all who had travelled by the *Ophir*, the passengers of which were unable to land.

Work began in the sections on Friday morning, while in the afternoon members of the Congress were invited to a reception by Sir Francis Cook (Viscount Monserrat) at his magnificent gardens near Cintra.

## THE INAUGURAL CEREMONY.

(FROM OUR SPECIAL COMMISSIONER.)

Lisbon, April 20th.

The Geographical Society possesses a long room or hall which serves as a museum. It is surrounded by glass cases containing curios and is lofty enough to have two galleries going all the way round. Its main support consists of iron girders and pillars; in fact, it looks something like the machine gallery of a theatre. It is possible to crowd a great number of persons in these two galleries and on the floor of this vast hall but the general effect is not impressive. Shortly after half-past one on Thursday afternoon the Government representatives began to gather upon and round the platform. As many were army surgeons they wore their uniforms and these, together with the university gowns which the British contingent largely affected, lent a more lively tone to the scene. The platform was raised scarcely two feet from the floor and was quite level. The distinguished members who crowded this small and but slight elevation hid each other from the great mass of spectators and members sitting in front. It is obvious that a platform should slant so that those who sit at the back can see and be seen. We may abuse the Madrid Congress but it is doubtful whether there was ever such a brilliant scene as that of the opening ceremony. This, it will be remembered, was held

at the Grand Opera House where the huge and slanting stage was converted into a platform by being walled in with gigantic carpets from the State factory. Undoubtedly a large opera house is admirably suited for ceremonies of this description, a fact brought home to me when I recalled the ceremony at Madrid three years ago and compared it with that of to-day. It is true that we are not so numerous on the present occasion but nevertheless the great hall of the Geographical Society was quite filled with a number of ladies as well as gentlemen. From the end furthest from the platform a string band had difficulty in making itself heard amid the clatter of so many voices and different languages.

Soon after 2 o'clock, and in spite of the noise, the crowd became aware that the band was playing the national anthem and therefore surmised that the King must have entered. Soon His Majesty Dom Carlos was seen walking up the centre of the hall. Three monumental chairs had been placed behind the table on the platform. The King occupied the central chair, on his right sat Her Majesty the Queen and on his left the Queen Mother. The Royal party were flanked on the right by the President of the Congress, Councillor Costa Alemão, and on the left by the general secretary of the Congress, Professor Miguel Bombarda. A few representatives of foreign Governments who happened to be near at hand were presented to the King. There then ensued a moment of deep silence and expectancy which was only broken when the King, in a clear resonant voice and speaking the purest French, began his address.

HIS MAJESTY first rendered homage to the labour to be undertaken by the Congress. This he did in the name of the whole nation because he was its supreme magistrate. He offered an open-hearted and cordial welcome to all the members of the Congress who had come from so many different countries to Portugal. In Portugal all were animated with the desire to share in such work as that of the Congress. They were inspired with feelings of solidarity and fraternity towards other nations. There was the religion of duty, the duty of the citizen to the State to which he belonged, the duty of the State towards other States. To relieve suffering and pain was the great work of the members of the Congress and the State must help in this beneficent work. The members of the Congress would relate what they had done, how they had fought against a multiplicity of evils, and the victories they had won. By such endeavours they had saved more lives than wars had destroyed. At times their progress was slow but it was irresistible in its action. Peoples were citizens of the world and each nation must do its duty towards other nations, so as to facilitate the realisation of the measures and principles necessary to preserve life. Personally, His Majesty insisted that he was an ardent student of the natural sciences and therefore was fully able to understand and to admire the work of the men of science who were attending the Congress. His beloved Queen had, on her side, taken so active a part in organising the struggle against tuberculosis that she had by her acts proved how much she was at heart with the work of the Congress. His Majesty concluded by saying that he was proud to preside over such an assembly and that the advent in Lisbon of so many distinguished men was an honour to Portugal. He then declared the Congress open.

The speech was warmly applauded, especially the reference to the endeavours of the Queen in helping to provide means for the struggle against tuberculosis.

Scene at the opening ceremony of the Fifteenth International Congress of Medicine. Professor Bombarda, Secretary General, is reading the inaugural statement. The Queen, in white, is sitting on the King's right and beyond her is Dr. Costa Alemão, President of the Congress. Dr. Pavy may be recognised in the foreground.

Councillor COSTA ALEMÃO, who spoke next as President of the Congress, expressed his gratitude to the King and the Royal Family for their help and then thanked the members of the Congress for their attendance.

Professor MIGUEL BOMBARDA, as secretary general of the Congress, followed and read out a mighty array of statistics showing how many papers and reports had been contributed to the Congress and how much had been done to render it a success. He managed to make a few compliments to the different nationalities represented, to the England of Harvey and the France of Pasteur, nor did he forget Japan which was represented on the platform by Dr. Oishi. The celebrated Japanese bacteriologist, Dr. Kitasato, was expected to attend but has unfortunately been detained.

Now commenced the apparently indispensable speeches from the different nationalities. The speeches are taken in the order of the alphabet according to the French titles, so that Germany began.

Professor W. WALDEYER of Berlin concluded his remarks by saying that as the Portuguese navigator had named the Cape of Good Hope in anticipation that he would discover the sea route to India, so also had they the good hope that

this Congress would lead to new and important discoveries in medicine.

Professor H. OBERSTEINER then spoke for Austria and was followed by the representative of the Argentine Republic.

Dr. DEJACE spoke for Belgium and hoped that during the twentieth century there would be no other war than the war against disease. Then came in rapid succession the spokesmen for Bulgaria, Chili, Colombia, and Denmark. Dr. C. CORTEZO, on behalf of Spain, where the last Congress had been held, alluded to the great interest taken in Spain in the arduous work of organising the present assembly.

Dr RICHARD spoke for the United States and praised the beauty of Portugal and Lisbon.

Professor CORNIL spoke for France and Sir DYCE DUCKWORTH for Great Britain. The latter elicited loud applause by addressing the Royal Family and the Portuguese people in Portuguese. He urged that the pursuers of scientific knowledge were above the strife of politics and in the name of his countrymen, and his countrywomen also, he thanked the Portuguese for their warm-hearted welcome.

The representative of Greece who followed naturally claimed to be the fellow countryman of Hippocrates. The Hungarian spokesman alluded to the effects of such congresses in enabling men of science to meet and to encourage each other.

As usual, the Italian representative was really eloquent. Dr. SANTINI spoke in his own beautiful language and his sentences rang out as sweet music; and though not many persons present understood fully what he said, still he stirred his audience by such oratorical sentences as the following: "Ed è altresì per me ragione di onore e di letizia porgere alla splendida Lisbona, la vetusta e vaghissima Regina di Occidente, città Principe della Lusitania, che tante vanta radiose glorie nei fasti più puri delle colonizzatrice civiltà ed è alle sorelle latine genti carissima, l'affettuoso saluto di Roma italica, dell'ALMA MATER, la quale infra il fiorente rinascimento di ogni terra latina, oggi, quasi più che secolare madre, ama delle latine genti nomarsi sorella amorosissima." When, finally, he concluded with further salutation to the land of Vasco de Gama from the land of Christopher Columbus he fairly brought down the house. Japan was represented by Dr. Shigekichi Oishi of the Imperial Japanese navy, and the mere mention of the word Japan sufficed to bring forth loud applause. Then came in rapid succession the representatives of Mexico, Monaco, Norway, and Dr. Pineaple for the Netherlands, who brought the good wishes of the Queen of Holland for the success of the Congress. Like the Portuguese, the Dutch, he said, were great navigators and claimed the ocean as their common mother.

The Roumanian representative, however, capped this by asserting that the Roumanians and the Portuguese belonged to the same Latin stock and said that he had been struck by the many things he had seen in Portugal which reminded him of his native Roumania. Now came the delegates of Russia, Sweden, and Venezuela. The Venezuelan was the twenty-fourth nationality speech and it was with a sigh of relief that the Congress heard that the representatives of the other nations were absent or had foregone their right to speak.

Professor POSNER of Berlin then rose as the newly elected President of the International Association of the Medical Press. Though a German, Professor Posner spoke in French because French is the official language of the association He explained that the association which he represented had held its general assembly during the last two days in Lisbon and had commissioned him to express the goodwill of the medical press towards the Congress. Under its present eminent patronage the Congress was sure to be a success An international movement, based on the desire to group together the medical journals of the world, had in the persons of its principal representatives come to pay homage to the Portuguese people. With the efficient aid of Professor Miguel Bombarda they had successfully accomplished their mission. That this should be so was a matter of importance for the Medical Congress. Now that the press had done its business it was quite ready to attend to the business of the Medical Congress and would echo in all countries whatever beneficent work might be accomplished at Lisbon for the greater good of humanity.

This speech, which was well received, was followed by an address from His Excellency Senhor HINTZE RIBEIRO, Premier and President of the Council of Ministers. Perhaps the opening passage of this speech gives the best idea of the eloquence of the Premier of the "Conservative-Progressive" Government which came into office only a few weeks ago. The Premier said:—

"Sire, Majesty,—More than many other homages, those of the messengers of universal science will have rejoiced your heart. In your memory the stirring words just pronounced will ever remain engraved. You may be well pleased with them. You, Madame, who have chosen medicine for the ally of your generous benevolence in the holy crusade against afflicting scourges; you, Madame, who have always and everywhere distributed the most beautiful flowers of that sublime virtue which is called charity; you, Sire, whose mind is ever alert, and who as a learned and humanitarian monarch have been so good as to address in person your august salutations to this pilgrimage of science—you have inaugurated, by words that will ever remain memorable, this cosmopolitan work of peace and solidarity in which sentiment and intelligence surpass each other so as to increase the value of health and of human life." The Premier concluded his oration by quoting the great Portuguese poet, Camoens, when he said that "to medicine would come a new light." This might serve as a motto for the Congress and if the new light came on the present occasion then it would carry the name of Portugal all over the world.

The Royal party rose and slowly wound their way through the crowd out of the great hall, stopping on the way to talk to some of the members of the Congress. There was now a little interval for rest or for seeing some of the sights between the conclusion of the inaugural meeting and the reception which the President of the Congress was to give later in the evening.

### RECEPTION AT THE NEW SCHOOL OF MEDICINE.

In the evening of Thursday, at the New School of Medicine, all the members of the Congress were received by its President, Councillor Costa Alemão. This is the first time that a large number of persons have penetrated this building, which is so new that it can scarcely be said to be quite finished. The chairs had only been brought in during the day. The bareness of the walls was concealed by artistic silks and tapestries, while here and there a handsome carpet had been unrolled on the floor at the very last moment. Indeed, for those who had seen the place a few days ago it is wonderful how much has been done in a very short time. In the central court the band of the Municipal Guards, which is one of the best military bands in Portugal, discoursed sweet music all the evening. It played, among other things, an international march composed of several national anthems. At the top of the building there was a buffet which many congressists did not find out but to which others did full justice. The chief pleasure, as is usual on such occasions, is the meeting of old friends and the making of new acquaintances. In this respect it was particularly noticed that the large portion of the British contingent that came by the *Ophir* were not present. Apparently these passengers are in no wise satisfied. They say that the boat was overcrowded and that there were not enough stewards on board to attend to their needs. Perhaps some of the complaints are exaggerated, but if half of what I have heard is true then they must have had an unpleasant time. One thing, however, is certain. The ship is moored away from shore on the Tagus which here is so broad as to constitute an arm of the sea. To land is a matter of time and the boatmen charge extra when it is rough. Even the steam tender which plies backwards and forwards is a small boat and its passengers get splashed in bad weather. Therefore, yesterday evening the passengers remained on board the big ship and did not expose themselves to the bad weather, but in so doing they missed the reception at the School of Medicine. The Germans, on the contrary, are delighted with the *Oceana* of the Hamburg-American line, where they met with every attention, had excellent food, and plenty of cabin room. Further, instead of casting anchor in mid-stream, the German ship is moored alongside the Lisbon quay and the passengers go in and out freely day and night; in fact, the ship is as convenient as an hotel. The ships of the Booth Line also anchor in mid-stream, but, such being the case, they provided hotel accommodation on shore for all their passengers and have been assiduous in attending to them ever since. One

of their agents, Mr. E. Garland, has indeed become very popular among the British visitors stranded here as strangers in a truly strange land. Complaint is made that at some of the hotels the Portuguese waiters are very incompetent and there is occasionally considerable difficulty in getting a meal served without much unnecessary loss of time. In regard to the *Ophir* I am told that the Congress committee in London made arrangements that the ship should come up alongside the river embankment as the *Oceana* has done. Further, it is stated that the money for the right to moor alongside was actually paid, when some persons suddenly conceived the idea that it would be dangerous to do so. There might be a sewer outfall close to the ship and it would not be safe to be so near the town. This is a matter on which the people at Lisbon feel very sore, they are very anxious to get some authorised pronouncement as to this supposed danger to ships that come close to the shore. In the meanwhile the mooring of the *Ophir* in mid-stream has been the cause of preventing a great number of the British members from assisting at the brilliant and pleasant reception held on the opening day of the Congress at the new School of Medicine.

### THE SECTIONS BEGIN WORK.

April 21st.

On Friday morning the sections were to begin work at 8.30. Having by previous and extended experience of international congresses acquired some knowledge of what this might mean, I did not allow such futile announcements to disturb my sleep. It was nearly 9.30 in the morning when I reached the new School of Medicine Most of the persons who were already present were looking after their badges, guide-books, invitations to festivities, or buying picture postcards. Still, being now fully an hour behind the announced time, it seemed to me that I should make quite sure that nothing really important was going on in the sections. In that of Obstetrics, which occupies one of the largest rooms, I found just 15 persons, including some ladies who had probably gone there because there were some pretty tapestry on the walls and comfortable chairs to lounge upon and to gossip for they did not belong to the section. Military Medicine has but a small room and that was already fairly well filled. The section had actually got to work, so that "military punctuality" is not a vain term after all. The section on Urinary Diseases was very scattered. A good many persons were there, perhaps 30 or 40, but they were all talking to each other. The best example of the effects of calling upon the sections to meet too early in the morning that came to my notice was in the Otological section. Here two members, and only two members, of the section had arrived. They had very wisely opened the window and stood out on a small balcony contemplating the magnificent view of the valley and the hill and castle of Lisbon beyond. It was delightful and they were also smoking very good cigars. In the Rhino-Laryngological section there were 11 members present but they had not opened the window and they only smoked cigarettes. The President occasionally stepped up to the table and gently tinkled a little silver bell but no one took the slightest notice, so the President left the table and the presidential chair to join in the general conversation. In the Pediatrics (surgical) section there were 14 persons and a German member was solemnly reading a long paper to them. By this time it was nearly 10 o'clock which is the earliest hour at which it is practicable to begin work considering the difficulties that assail strangers living in crowded hotels; therefore I proceeded to my own section—that of Hygiene—which I found had just begun business with an audience of 20 persons. The number, however, soon increased and we had an interesting discussion which I hope to describe on a subsequent occasion.

All the sections adjourned early so as to join in the excursion to the magnificent gardens of Sir Francis Cook at Monserrat, near Cintra, so it does not appear that very much work was done anywhere. In the Dermatological section I am told that nothing of importance is expected. There are not many papers and of these several have already been published. The members of the section do not seem to think that they can instruct each other and so I rather fancy the meeting and discussions will not be prolonged in this section but its members will have more time to enjoy the beauties of the country.

During the first morning the subject discussed in the section on Therapeutics was the Effect of Exercise on Arteriosclerosis. In the section on Neurology, Professor RAYMOND of the Salpêtrière Hospital read a good paper on the Danger of Mercury in the Treatment of General Paralysis.

To-day, Saturday, there was no attempt to start the work of the sections at too early an hour. Consequently they were better attended when they did commence business. Also, the members have now got most of the tickets and other things that they wanted, so were able to get to work with greater facility. A considerable number of important papers were read to-day, and there was a very ardent debate at a mixed meeting of the fourteenth and seventeenth sections on the Prophylaxis of Yellow Fever. This afternoon the first of a large series of lectures and demonstrations was given, including a very interesting report on the above subject by Professor Rubert W Boyce of the Liverpool School of Tropical Medicine. So that now it may be said that the Congress has got fairly into harness. If the sections have been somewhat dilatory it is the fault of the members themselves. So far as the organisation of the Congress is concerned, all was ready for them. Nor have I, as yet, heard any complaints concerning the management in general of the Congress. It is, perhaps, too soon to say much about this but so far all promises well.

## THE SECTIONS.

### GENERAL PATHOLOGY, BACTERIOLOGY, AND PATHOLOGICAL ANATOMY.

Professor HANS CHIARI (Prague) read a paper upon

*The Relations between the Pancreas and Fat Necrosis.*

He said that this condition was given its present name by Balser in 1882. An extensive literature on the subject has appeared since that time and numerous experiments prove that fat necrosis is etiologically dependent on the action of the proteolytic ferment and the fat ferment of the pancreatic juice in presence of certain pathological changes in the pancreatic tissue. Wounds of the pancreas must obviously permit its juices to escape, but quite apart from this if there is any deterioration (*Schädigung*) of its structure and if juice possessing functional activity continues to be formed this secretion may disintegrate the deteriorated cells and by means of this tryptic self-digestion the pancreatic juice may arrive at the exterior of the gland. There exist in the pancreas some special conditions which do not occur in any other considerable gland but are to some extent represented in the phenomena of pepsin self-digestion of the stomach, a condition which may result from a great number of causes leading to deterioration of the walls of the stomach and failure of them to resist the action of the gastric juice. This tryptic self-digestion of the pancreas does not necessarily produce identical effects on the general health of the individual. On the one hand, the consequences may be extremely serious, such as extensive hæmorrhage into the pancreas and its vicinity, the formation of hæmorrhagic cysts in the position of the pancreas, localised or diffuse necrosis of the pancreas, suppurative pancreatitis due to the admission of bacteria, and the development of pancreatic sequestra, all this being very often associated with abundant fat necrosis. On the other hand, the tryptic self-digestion of the pancreatic tissue may be insignificant in extent, the fat necrosis may be harmless, and in course of time the symptoms of a lesion of the pancreas may disappear. Not much is known regarding the etiology of the stage preceding the self digestion of the pancreas. The severe cases are most frequent in corpulent persons and habitual drunkards. The connexion between true inflammation of the pancreas and self-digestion requires further elucidation.

Dr. ERNEST FRANCIS BASHFORD, director of the laboratory of the Imperial Cancer Research Fund, London, read a paper upon

*The Classification of the Sarcomata.*

He said that the sarcomata were connective-tissue new growths as distinguished from the carcinomata which were epithelial new growths. Sarcomata with all the features of malignant new growths were found throughout the mammalia and in marine fishes living in a state of nature. They had therefore the same zoological distribution as the carcinomata. Sarcomata, if they occurred in inaccessible sites, were clinically indistinguishable from carcinomata. Experimentally sarcoma was as difficult to transfer to

another individual as carcinoma, and indeed the complete demonstration of the transmission of a sarcoma from one individual to another has not yet been furnished. There was no evidence that the sarcomata were infectious new growths. Carcinoma and sarcoma had so many features in common that they were probably manifestations of an identical or similar process in the epithelial and connective tissues respectively. The demarcation of the sarcomata from the granulomata, which were also new growths of connective-tissue origin, was not easy. By microscopical and clinical examination alone it was not possible to determine in some cases to which group a tumour should be assigned. Tumours have frequently been described as sarcomata when in reality they were infective granulomata yielding a high percentage of success in transmission experiments. Inoculation therefore afforded a means of recognising the true nature of some doubtful new growths and of establishing definite distinctions between the sarcomata and those forms of infective granulomata of which the specific causative organisms have not yet been isolated. The same method might also be expected to throw light on the relation, if any, existing between the various forms of leukæmia, Hodgkin's disease, chloroma, and other obscure conditions associated with enlarged lymphatic glands, and sarcoma on the one hand and granulomata on the other. The classification of the various forms of the sarcomata at present in vogue was morphological and histogenetic. For growths with well-marked differentiation, such as osteo-sarcoma or chondro-sarcoma, it was doubtful if in the present state of knowledge a more satisfactory classification could be devised.

Professor ERICH MARTINI (Berlin), staff surgeon in the German navy, read a paper upon

*Trypanosomiasis.*

After a general reference to human diseases in which spirochætæ were found and to the effects of trypanosomiasis affecting the lower mammals, birds, fish, &c., he proceeded to consider the latter disease in the human subject under the two headings of African trypanosomiasis and kala-azar. African trypanosomiasis was known as trypanosoma fever in its early stages and sleeping sickness in its later stages. It was conveyed by the glossina palpalis and was an exclusively African disease. Kala-azar and other febrile cachexiæ caused by the same parasite occurred principally in India but have been seen in Africa as well. The first account of sleeping sickness was published in 1803 by Dr. T. M. Winterbottom who had observed it in Sierra Leone. It has occasionally been conveyed to America by imported negroes but has never spread there. The parasite was discovered by Dr. J. S. Dutton and Mr. R. M. Forde in 1901. The preliminary latent stage might vary from two to eight years; the onset of the sleeping sickness stage was followed by death in from four to eight months. No method of immunisation was possible and prophylaxis depended entirely on the use of mosquito nets, wire gauze, and gloves as a protection against the glossina. Treatment consisted only in the use of palliative measures. Kala-azar (*Anglice*, black fever) was so called because in the early stages the patient's skin was sometimes pigmented. A considerable number of observers have taken part in elucidating the pathology of the disease. Although the insect by which the parasite was conveyed has not been positively identified the methods of prophylaxis recommended against African trypanosomiasis might be tried. No specific treatment was known. The patient's diet must be carefully selected on account of the frequency of intestinal complications.

Dr. A. LAVERAN (Paris) read a paper upon

*Prophylactic Inoculations against Protozoal Diseases.*

He discussed the subjects under the three heads of malaria, piroplasmosis, and trypanosomiasis. With regard to the first it was well known that negroes, although by no means exempt from malaria, nevertheless thrived in countries so malarious as to be uninhabitable for persons of other races. This partial immunity was peculiar to the negro and there was no evidence of its occurrence among the natives of the malarious regions of Europe. Various forms of piroplasmosis occurred in cattle, sheep, dogs, and horses. There were two forms of bovine piroplasmosis—namely, Texas fever and Rhodesia fever. Animals which have survived an attack of either variety were immune against that variety but not against the other. Texas fever did not attack native cattle but imported cattle died from it in large numbers. Various attempts, more or less successful, have been made to produce immunity by inoculating healthy animals with the blood of convalescents. Animals might be infected with the trypanosoma Gambiense or parasite of human sleeping sickness, but those which recovered were not rendered immune. Rats, on the other hand, might be easily immunised against the trypanosoma Lewisi.

Dr. SWALE VINCENT, professor of physiology in the University of Manitoba, read a paper upon

*Internal Secretion and the Ductless Glands.*

He said that the term "internal secretion" seemed to have been first used by Claude Bernard who, in his "Leçons de Physiologie Expérimentale" described the glycogenic function of the liver as the *sécrétion interne*, while he referred to the preparation of the bile as the *sécrétion externe*. The structures usually included at the present time under the title of ductless glands were the thyroid gland, the parathyroid glands, the cortical suprarenal gland, the medullary suprarenal gland, the pituitary body, the carotid and coccygeal bodies, and possibly the thymus. It was believed that these ductless glands manufactured and poured, directly or indirectly, into the blood stream some substance or substances which were of service to the economy, either by supplying a need or by destroying other substances which were needless or positively harmful. This last function was usually ascribed to the thyroid and parathyroid glands; the theory obviously assumed the existence of a process of auto-intoxication. In his summary of the theories which have been proposed as to the function of the suprarenal capsules Professor Vincent said that the two chief theories were (1) the auto-intoxication theory and (2) the theory of internal secretions. The former was supported by Abelous and Langlois, who believed that toxic substances, the products of muscular metabolism, tended to accumulate in the organism and that the function of the glands was to remove or to destroy these. The internal secretion theory, on the contrary, asserted that the suprarenal capsules were continually secreting into the blood an active material, adrenalin, which was of benefit to the muscular contraction and tone of the cardiac and vascular walls and even of the skeletal muscles. Although the theory of internal secretion appeared to have the balance of probability on its side, the direct evidence in favour of the secretion of material into the blood-stream was, however, very slight. The auto-intoxication theory would seem to require the assumption that adrenalin was a waste product soon about to be eliminated, while the internal secretion theory supposed that it was a product of glandular activity manufactured for use in the economy. It was not yet possible to express definite opinions on the subject.

Staff-Surgeon Professor ADOLF DIEUDONNÉ (Munich) read a paper on

*Prophylactic Inoculation against Infectious Diseases.*

He said that the procedures employed for this purpose were (1) inoculation with virulent living pathogenic microbes; (2) inoculation with attenuated living pathogenic microbes; (3) inoculation with dead bacteria; and (4) inoculation with bacterial extracts. The first-mentioned of these was but little used; the second was exemplified by vaccination for small-pox and by antirabic treatment; the third was applied on a large scale against cholera, enteric fever, and plague; and the various forms of treatment by tuberculin were the principal examples of the fourth. Inoculation with dead bacteria was first attempted in the human subject by Kolle. He found that specific protective substances (bacteriolysins and agglutinins) were produced in considerable quantity after a single injection of small quantities of dead cultures grown on agar and that the existence of these protective substances was perceptible even a year after the injection. As a prophylactic against cholera and plague Haffkine used bouillon cultures several weeks old; and as a prophylactic against enteric fever, Professor A. E. Wright used bouillon cultures which after growing for 48 hours had been killed by exposure to a temperature of 65° C. Professor Dieudonné gave some account of the results obtained from the inoculation against enteric fever of German soldiers sent to South-West Africa since January, 1905. More than 5000 men were inoculated, usually between the collar-bone and the nipple. With most of them the general reaction with malaise and a temperature rising as high as 39° C. took place in from two to five hours, but these symptoms completely disappeared in from 12 to 16 hours and the local effects did not remain longer than 48 hours. When

enteric fever made its appearance the mortality was 4 per cent. among the inoculated and 11 per cent. among the uninoculated. Among the uninoculated the proportions of severe and mild cases were respectively 25 and 42 per cent., whilst among the inoculated the proportions of severe and mild cases were respectively 10 and 66 per cent.

## MEDICINE.

### *The Treatment of Cirrhoses of the Liver.*

Dr. R. SAUNDBY (Birmingham) read a communication on this subject. He said that it was a question whether interstitial hepatitis in itself gave rise to any symptoms which attracted attention other than the mechanical disturbance of the circulation. The main symptom of importance which really depended upon the hepatitis was ascites. Coincidently with the obstruction in the liver of the portal circulation a collateral circulation developed and as the progress of the hepatitis was slow it was probable that but for some accident occurring this collateral circulation would always be compensation enough for the ordinary portal circulation to prevent ascites. Sudden congestion of the liver from an alcoholic debauch was the most common cause of the equilibrium being upset. When fluid had been poured out into the abdominal cavity it constituted a hindrance to the venous circulation by raising the intra-abdominal pressure. For this reason diuretics were useless to remove the fluid and hydragogue cathartics might set up a fatal enteritis. Paracentesis was therefore the best method of removing the fluid. It should be performed as soon as the fluid had accumulated sufficiently to cause discomfort and should be repeated as often as the fluid re-accumulated. By repeated punctures there was fair prospect of re-establishing the circulation. When repeated tapping was not successful in preventing the return of the dropsy the Talma-Morison operation might be performed. This consisted in opening the abdomen and stitching the omentum to the abdominal wall, so as to increase the area of the collateral circulation. Prolonged drainage after the operation did not seem to be justifiable. But the value of the operation should not be over-estimated and as a rule simple repeated tapping sufficed. Where, however, this did not suffice the Talma-Morison operation was indicated. It was not fair to postpone it until the patient was moribund. As for hæmatemesis, which was the other symptom directly dependent upon the hepatitis, it and ascites were mutually exclusive and rarely occurred in the same individual except just before death. The treatment of hæmatemesis was purely palliative and consisted in rest, abstinence from food, and the application of an ice-bag, together with a hypodermic injection of morphine.

### *The International Prophylaxis of Tuberculosis.*

M. SAMUEL BERNHEIM (Paris) read a paper upon the above subject. He referred to the notice taken of the matter at the Congress on Tuberculosis held in London in 1901 and to the formation of an International Bureau to deal with tuberculosis, the seat of which should be at Berlin, and to the foundation of the Société Internationale de la Tuberculose, which had its headquarters at Paris. Tuberculosis should be a matter for the consideration of international hygiene just as much as were plague, cholera, and yellow fever. The markedly free intercourse among various nations which was characteristic of these present times made it easy for tuberculosis to spread, and the disease was specially rife amongst those employed in traffic of all kinds, notably among sailors and among railway servants. In the navy tuberculosis was common and its existence was made easy by the almost necessarily unhygienic conditions of life which exist on board of a modern battle-ship. It was also extremely common on modern cargo ships. As regards land traffic, railways were responsible for the spread of tuberculosis to a marked degree. In fact, as Brouardel had said, "The railway industry has, as regards the spread of tuberculosis, an influence throughout the territory which is affected thereby, comparable to that exercised by the army and the navy." M. Bernheim's conclusions were as follows. The prophylaxis of tuberculosis should be an international matter. The most rigid rules of prophylaxis, even if accurately carried out, were useless if only applied to one country. Unless the neighbouring countries, or, indeed, those more distant, carried out the same or similar rules, prophylaxis in any particular country was rendered of no effect. Regulations for the international prophylaxis of tuberculosis should be laid down comparable to those already decided on at various international conferences, such as those at Paris in 1894 and at Venice in 1897, in regard to plague, cholera, and yellow fever. An international commission composed of authorised representatives of the various nations should be appointed and should compare the various regulations existing in the respective countries represented. Then an international code of prophylactic regulations against tuberculosis could be drawn up. "If," concluded M. Bernheim, "there is a question, which in its very essence is catholic and which merits the attention and watchfulness of the *savants* of the whole world, it is that of tuberculosis. But it will never be solved save by the union of the intelligence and the goodwill of all the nations."

### *The Pathogenesis of Arterial Hypertension.*

Two papers were communicated to the Congress upon this important subject, the one by Dr. TRUNECEK (Prague) and the other by Dr. HENRI HUCHARD (Paris).

Dr. TRUNECEK pointed out that arterial hypertension could be divided into two great classes. The one was called spastic hypertension and was due to a narrowing of the calibre of the blood-containing vessels; the other was called plethoric hypertension and was due to an increase in the contents of the blood-vessels. One quality was common to both these types—namely, a rise in the blood pressure. Putting aside cases of congenital narrowing of the blood-vessels, or of a possible "plethoric habit," which had a theoretical rather than a practical value, he passed on to consider the pathological condition of hypertension. As to spastic hypertension its main cause was probably some alteration in the bio-chemical qualities of the blood. Its characteristic symptom was a pulse strong and full in the large arteries and hard and small in the little arteries. The arteries, especially those of medium calibre, became hard and tortuous. Moreover, in patients who had suffered for some time from hypertension various affections due to anæmia arose. Thus cerebral anæmias gave rise to transitory aphasias or paralyses. Pectoral anæmia gave rise to anginas. Abdominal anæmia gave rise to alternations of diarrhœa and constipation or to a discharge of urine at one time of low specific gravity, abundant and limpid; at another scanty, concentrated, and full of urates. Peripheral anæmia gave rise to the well-known phenomena of "dead fingers." With regard to plethoric hypertension its mode of origin was very obscure. It might be divided into polycythæmic plethora and serous plethora. Its characteristic symptom as compared with spastic hypertension was a pulse strong and full in the great and little arteries. The capillaries and veins were distended and the arteries were neither hard nor tortuous.

Dr. HENRI HUCHARD commenced his paper by saying that the subject of arterial hypertension had occupied him for many years, and more especially as it affected the heart. The results of arterial hypertension naturally divided themselves into three sections—the physiological, the pathological, and the therapeutic. As to physiology, compression of an artery diminished the blood pressure on the distal side of the point of compression and increased it on the proximal side, this increase being proportional to the calibre of the artery and consequently to the flow of blood through it. The heart, however, could adapt itself to varying pressures. Experiments had shown that if the arterial tension were constantly augmented the cardiac valves became œdematous and exhibited punctiform hæmorrhages. Vascular tone depended not only upon the myocardium, the mass of the blood, and the vessels, but also upon the action of certain glands. Some glands, such as the suprarenal body, secreted a hypertensive substance; others, such as the thyroid body or the liver, secreted a hypotensive substance. As to pathological consequences, arterial hypertension could, and did, produce arterio-sclerosis, the various circulatory troubles which were often so evident at the menopause and at puberty, migraine, and, in addition, arterial hypertension had a most injurious effect upon aneurysms. The condition also played its part in lead poisoning, gout, diabetes, hæmorrhages, of which it may be either the cause or the cure, Raynaud's disease, and various "neuralgias." The gastric crises in tabetic subjects were often preceded by a rise in the blood pressure, and in heart disease and affections of the vessels its influence was most marked. In the brain it gave rise to cerebral hæmorrhages and to the transitory aphasias seen in pregnant women or in those affected with arterio-sclerosis. Increased arterial tension may also be the cause of sudden attacks of cardiac dilatation seen in acute

infectious disease and especially in scarlet fever. As to therapeutics, hygienic measures were of the first importance. The diet should be principally milk or milk and vegetables or a simple "dechloridated" *régime*. Of drugs the most useful were the nitrites. The working of the kidneys must be carefully watched and to assist the elimination of urinary toxins theobromine was exceedingly useful. Ovarian extract might be of use in the arterio-scleroses of the menopause. Although many medical men believed that calomel in small doses could lower arterial tension Dr. Huchard did not feel the same confidence in the use of that drug.

*Cerebro-spinal Meningitis.*

Dr. JUDICE CABRAL (Lagos) communicated a long paper upon this subject. The paper was really a monograph upon epidemic cerebro-spinal meningitis and we cannot do more in the space at our command than indicate the main points of what was an exhaustive essay upon the disease in question. Dr. Cabral commenced by dividing the various forms of meningitis by the method of dichotomy into those that were tuberculous and those that were not. He then gave the differential points of diagnosis between these two forms. With regard to the non-tuberculous forms of meningitis these again might be divided into two groups. In the one came epidemic cerebro-spinal meningitis, the cause of which was a definite microbe, the diplococcus intracellularis of Weichselbaum, and those due to the pneumococcus, the streptococcus and other microbes, not appearing secondarily to the incidence of the microbe on the pulmonary system or elsewhere, but as primary affections. In the other group were the forms of meningitis evidencing themselves as complications of other disorders, such as typhoid fever, influenza, and the specific fevers. Dr. Cabral then passed to consider the main subjects of his essay—namely, epidemic cerebro-spinal meningitis. He gave a historical retrospect of the disease and then discussed its etiology, the specific bacillus, and the influence of locality, season of year, sex, occupation, and personal conditions, such as lactation and pregnancy. Methods of invasion, the question of contagion (on the whole, it would seem that the disease was contagious), were next considered. The general and special symptomatology were then dealt with from observations upon 178 patients seen during the epidemic in Portugal of 1901–02. As to the outcome of the disease, recovery with or without some organic or functional defect was the rule, but the death-rate was high—namely, 40 per cent. The average duration of the disease in cases which recovered was from 16 to 35 days. Dr. Cabral then described the post-mortem appearances, discussed the diagnosis and prognosis, and concluded with directions for treatment. In his opinion the best method was lumbar puncture either alone or followed by the injection into the spinal canal of a 1 per cent. solution of lysol or of cyanide of mercury. The application of leeches to the mastoid apophyses and wet cupping along the spinal column were also useful, as was the administration of calomel, opium, and the bromides. Large enemata (two litres) of plain boiled water or the same with the addition of a slight purgative might also be said to be almost always of service. The whole essay deserves the careful attention of medical men, worked out, as it is, from personal observation of a number of cases in a quite recent epidemic.

Professor ANTON WEICHSELBAUM (Vienna) read a paper upon

*Cerebro-spinal Meningitis.*

He said that in nosology this term was not applied in its widest signification but was restricted to the class of cases in which the disease assumed the epidemic form. Every variety of the disease which tended to become intermittent or chronic was caused by the micrococcus meningitidis cerebro-spinalis, an earlier name of which was the diplococcus intracellularis meningitidis. In a few cases of exceptionally acute type the disease has been caused by the diplococcus pneumoniæ and the streptococcus mucosus. The micrococcus was found principally in the meningeal exudation and in the mucus of the naso-pharynx. In epidemic times it might be found in the latter situation in persons who were suffering only from catarrh and had no symptoms of meningitis. It was therefore probable that the cavity of the naso-pharynx was the channel through which the micrococcus both found an entrance and was also conveyed from the sick to the healthy during the acts of sneezing, coughing, speaking, &c. As it had very little resisting power it was not likely to be dangerous when mixed with dust. The disease might be either sporadic or epidemic. Sporadic cases might occur year after year, often without any connexion between them being known other than the fact of vicinity. Epidemics never broke out suddenly. The disease extended itself gradually and chiefly in houses which were overcrowded, damp, dark, and not kept clean. Epidemics generally began in winter or spring; children and young persons were especially liable to be attacked. For the purpose of diagnosis cerebro-spinal fluid obtained by lumbar puncture must be subjected while perfectly fresh to microscopical and cultural examination.

## PEDIATRICS.

M. CARLOS FRANÇA (Lisbon) read a paper on

*The Varieties of Cerebro-spinal Meningitis.*

The only useful classification of these varieties was one based on the causal agency in operation. He had adopted Osler's classification with slight modifications. Having recently dealt with a large number of cases of epidemic cerebro-spinal meningitis M. França gave a minute description of the malady and discussed each symptom separately with regard to its presence or absence in the other forms of meningitis. 271 cases of epidemic cerebro-spinal meningitis had been studied bacteriologically and in every case the typical diplococcus intracellularis of Weichselbaum had been isolated. With regard to the treatment M. França considered that the baths usually recommended, though undoubtedly beneficial, were so painful to the patients as to be often an impossible remedy. Lumbar puncture, on the contrary, was well borne and produced visible improvement. Great care was necessary for its proper performance. A fine platinum needle should be used one-quarter of a millimetre in diameter and 0·05 of a metre in length. The lateral decubitus was the position ordinarily recommended for the operation but M. França preferred to have the patient seated on the edge of the bed, the legs either hanging or bent and crossed and the trunk inclined well forward, thus producing the greatest possible separation of the lumbar vertebræ. A line joining the iliac crests passes across the fourth lumbar space and a line joining the postero-inferior iliac spines passes through the fifth lumbar vertebra. The needle is introduced a centimetre outside and a little above the arch above which the puncture is to be made. The needle should be directed a little obliquely up and in towards the median line; if no fluid comes at once slight rotation and withdrawal will cause it to appear. At the beginning of the malady puncture may be required daily, or even several times daily, according to the necessities of each case. In most cases from 40 to 50 cubic centimetres is sufficient to withdraw at one time. In several cases, after removal of from 25 to 50 cubic centimetres of cerebro-spinal fluid, injections of lysol (1 in 100) were made—from 12 to 18 cubic centimetres in the case of adult patients and from three to nine cubic centimetres in the case of children. M. França summed up his conclusions thus: 1. There are as many varieties of cerebro-spinal meningitis as there are microbes capable of living in the meninges. 2. The symptomatology of the different forms does not vary with the cause sufficiently to make diagnosis of the cause possible by that means. 3. Epidemic cerebro-spinal meningitis, caused by the diplococcus of Weichselbaum, is the only meningitis with a perfectly definite morbid entity. 4. The cause of the meningitis can be discovered only by the examination of the cerebro-spinal fluid. 5. The best treatment at present of the bacterial forms of cerebro-spinal meningitis (the tuberculous form alone excepted) is lumbar puncture, followed by antiseptic injections into the spinal canal. 6. Lumbar puncture is the curative treatment for non-bacterial forms of meningitis and is at least palliative in the tuberculous form. 7. Lumbar puncture is, and will be, the chief element in the diagnosis, prognosis, and treatment of the forms of meningitis.

*Cerebral Palsy in Children.*

Dr. GEORGE F. STILL (London) read a paper on this subject with special reference to etiology. His clinical observations had not led him to agree with the usually accepted theory that infantile hemiplegia was always of post-natal origin. Out of 49 cases investigated two were certainly congenital and seven were possibly, if not probably, congenital. Severe asphyxia at birth, in his opinion, was often undoubtedly a cause of idiocy and might reasonably also affect the motor centres. Asphyxia had occurred in 17 cases of spastic diplegia and in four of spastic paraplegia. 11 out of 25 cases of spastic paraplegia were born

prematurely. Parental syphilis played but a small part in his statistics. It had been suggested that post-natal cerebral palsies were of infective origin, pathologically identical with acute anterior poliomyelitis, but infantile hemiplegia had not a similar seasonal incidence and epidemic occurrence and there were at present no scientific grounds for this assumption of identity.

Dr. M. A. BROCA (Paris) read a paper on

*The Treatment of Abdominal Tuberculosis.*

Only five years ago surgeons and physicians had pronounced almost unanimously in favour of surgical treatment for all cases of tuberculous peritonitis. Nowadays there was a reactionary party entirely in favour of medical treatment. The most recent surgical statistics showed positive cure two years after operation only in about 30 per cent. of cases operated upon. At the time when surgery was just coming to the fore Perroud's statistics (1875 to 1886) of medical treatment showed a death-rate of 50 per cent.; of the remaining 50 per cent., 14 per cent. were lost sight of, 32 per cent. were only improved, and only 4 per cent. were positively cured. It was an indubitable fact that simple residence in hospital sufficed to cure many cases and certain surgical successes were in reality due to the medical after-care, proper food, air, and light obtained in a hospital. Many cases ran a benign course with spontaneous cure, and in France Alleaume, Grange, A. Martin,[1] and R. Gœpfert had published statistics of cures after residence at the seaside; in Germany Rose[2] reported 52 cases, one-third of which were cured; and in America Guthrie[3] reported 41 cases; out of 14 operated upon seven had died and out of 27 not operated upon only four had died. All these statistics were untrustworthy because the after history of the patients had not been followed up for more than a year after apparent cure. The prognosis and treatment varied according to which of two great groups the individual case belonged to: (1) where the peritoneum alone was involved; and (2) where there were also present generalised lesions, acute, subacute, or chronic. Dr. Broca then discussed the several recognised clinical varieties of tuberculous peritonitis. Firstly, the form with more or less acute onset and rapid collection of ascites. This usually subsided rapidly, but if the absorption of fluid was slow it was probable that fibro caseous formation was taking place and laparotomy was then indicated, without peritoneal lavage or drainage. Secondly, there was a variety in which the ascites was encysted, hard and soft masses were palpable, and hectic fever was present. Little or nothing could be done for such cases either by physician or surgeon. Occasionally these cases healed spontaneously by passing on to a fibro-adhesive type. The surgeon should be on the watch for local abscesses which should be opened. Thirdly, there were peri-cæcal and pelvic varieties which required surgical intervention; sometimes simple laparotomy sufficed and sometimes removal of the tubes and ovaries was required. Fourthly, surgical intervention was indicated in all cases with complications, such as intestinal obstruction, acute or chronic.

Professor ADOLPH LORENZ (Vienna) read a paper on

*The "Bloodless" Treatment of Congenital Dislocation of the Hip.*

After some introductory remarks he proceeded to give a description of the technique of the operation, with which most of our readers are familiar. An operator must, he said, have no doubt as to the success or failure of his performance; a skiagram was useless as a control. Professor Lorenz then summarised his experience as to the length of time required for fixation after the operation; this varied so greatly with the age of the patient that no precise rules could be formulated. The result of the operation varied with the age of the patient, the most favourable ages being from the third to the fifth year; the seventh year was the limit at which a double dislocation could be successfully treated; and the ninth year was the limit for a unilateral dislocation.

Professor SALAZAR DE SOUZA (Lisbon) read a paper on

*Orthopædic Surgery for Spastic and Paralytic Deformities of Nervous Origin.*

He discussed cases met with after anterior poliomyelitis and Little's paralysis. In anterior poliomyelitis transplantation of tendons had not given so good results as similar operations for paralysis following trauma. This was explained by the fact that the so-called "healthy" muscles in a limb affected by anterior poliomyelitis were never or only rarely quite healthy. Ankylosis of the joints was more often indicated than transplantation of tendons. For spastic paralytic deformities the best methods were tenotomy, stretching of the tendons followed by over correction and fixation in plaster. Transplantation would be reserved for obstinate cases, due either to long duration or to exaggerated contractions accompanied by manifest atrophy of the antagonistic muscles. Then the steps to be taken were: (1) tenotomy of the contracted muscles; (2) permanent abolition of part of these muscles by means of (3) the transference of their energy to the antagonistic stretched muscles. In cases of spastic diplegia of cerebral origin the results were never good; the joints might require to be fixed and tenotomy performed so as to permit of the adjustment of some orthopædic apparatus.

Dr. P. REDARD (Paris) also read a paper on this subject. He considered first the paralytic deformities consequent on partial or total destruction of the nerve supply of the muscles of the limbs, in which the surgeon had to contend against both the paralysis and the deformity. At the present day the chief method was transplantation of tendons, and the lower extremities gave the greatest field for this form of surgery. The spastic deformities were next reviewed, and he pointed out the necessity of distinguishing between true contractures, with exaggerated reflexes, normal electrical reactions and disappearance under chloroform, and false or pseudo-contractures, with absent reflexes and persistence under chloroform. The principal surgical operations in vogue were considered under the headings: (*a*) forcible replacement; (*b*) operation on the tendons: (1) tenotomy, stretching, and shortening of tendons, (2) anastomosis of muscle and tendon by various methods of transplantation, (3) transplantation of the tendons into the periosteum, (4) transplantation with artificial tendons, and (5) tendinous fixation; operation on (*c*) the aponeuroses and muscles; (*d*) the capsules and ligaments; (*e*) the bones; (*f*) the joints; (*g*) the nerves; and (*h*) the skull and vertebræ. The value of these methods and their indications in paralytic and spastic deformities respectively were next considered at length and the conclusions were drawn that the tendinous transplantations and neurotomies were only of occasional use. Tenotomy was useful in spastic deformities such as Little's disease, spastic hemiplegia, and diplegia. Torticollis and facial spasm did better with psychotherapy. Where groups of muscles were paralysed transplantation was indicated. Nerve anastomosis and nerve suture were useful in traumatic cases, obstetrical paralysis, and sometimes in infantile paralysis.

M. P. HAUSHALTER (Nancy) and M. R. COLLIN (Nancy) communicated a paper on

*The Classification and Pathology of the Spastic Affections of Infancy.*

A brief summary was given of the opinions of the leading neurologists on the symptoms and clinical relationships of the various spastic affections of infancy—spastic infantile hemiplegia, spastic diplegia, monoplegia, athetosis, and the several forms of congenital spastic rigidity unaccompanied by paralysis. The term Little's disease was nowadays employed to indicate cases of spastic diplegia in prematurely born infants. The clinical causes, such as protracted labour or asphyxia at birth, shed no light on the classification of rigidity. In order to arrive at any reasonable solution of the problem it was necessary to study the anatomical conditions underlying all types. In order of frequency these were: (1) cerebral atrophy and sclerosis; (2) meningo-encephalitis; (3) porencephalus; (4) hydrocephalus; (5) small convolutions; (6) cerebral softening; (7) histological alterations in the pyramidal tract without macroscopical lesions; and (8) lesions in the centre of the cord. A detailed analysis of the recorded cases from 1885 to 1904 was given and the conclusion was drawn that out of 56 cases on which a necropsy was performed, in 52 the lesion was in the brain and in two only was it in the spinal cord. Of the 52 cerebral lesions, in 51 cases the lesion was found in the anterior part of the brain and was mainly superficial, the central nuclei having been only rarely involved. With reference to spinal lesions Déjérine had made a careful study of two cases with sclerosis in the cervical region of the cord; his facts were of the utmost importance because they proved that the

[1] Thèses de Doctorat de Paris: Alleaume, 1893-94, No. 422; Grange, 1901-02, No. 352; and A. Martin, 1903-04, No. 323.
[2] Rose: Mittheilungen aus den Grenzgebiete der Medicin und Chirurgie, 1901, p. 11.
[3] Guthrie: Archive of Pediatrics, New York, April, 1903, p. 241.

only essential factor in cases of spastic rigidity was a lesion involving the pyramidal tract in the spinal cord. Thus it had been demonstrated that in the two groups of causes—cerebral and spinal lesions—the common factor was an alteration of the pyramidal tract in the spinal cord. This pathological alteration might consist of destruction, more or less complete, defective formation, or absence of the tract. Arrested development of the pyramidal tract could not account for all the symptoms, however; if such were the case all infants born at seven months would have rigidity. The lesion was always in the upper motor neuron; the reflex arc with the motor cells in the anterior horn of the cord remained intact. The evolution of the theories relative to rigidity in general, and to infantile rigidity in particular, were then reviewed—the strychninism of Charcot, the theories arising from Adamkiewicz's idea of muscle tonus, the evidence of Jackson and Bastian as to the influence of the cerebellum (1896), and the careful observations of van Gehuchten and Déjerine. Grasset's theory of three stages of neurons (1899) explained more clinical facts than did that of any previous writer but up to the present no theory adequate to explain all cases of rigidity had been presented.

## SURGERY.

Dr. BARTHÉLEMY GUISY (Athens) read a paper on

*Chronic Urethritis and its Treatment.*

He said that under the term chronic urethritis is included every chronic, painless inflammation of the mucous membrane of the urethra of gonococcal origin, even though no gonococci may be present. There are three main varieties: (1) those in which gonococci are still present; (2) those which are microbic but gonococci are absent; and (3) those in which no organisms are to be found. The spread of a gonococcal urethritis from the anterior to the posterior urethra and to the deeper structures is due partly to the active movements of the gonococci and partly to the movements of the leucocytes which have swallowed them. Within a few hours of infection of the urethra gonococci can be found in the submucous tissue and around the glands of the urethra. The reasons for a urethritis becoming chronic are: (1) the presence of some constitutional condition, such as general weakness or rheumatism; and (2) certain special anatomical conditions in the urethra, such as a stricture or an abscess. Dr. Guisy thinks that stricture of itself has very little to do with the production of a chronic urethritis. The most important cause is the gonococcal infection of the glands of Littré and the crypts of Morgagni, from which repeated reinfection of the urethra may proceed. The treatment of chronic gonococcal urethritis consists, in the first place, in its prevention by the abortive treatment of acute gonorrhœa with extensive lavage of the urethra with various antiseptic solutions. In a chronic urethritis, if examination shows gonococci still to be present, the same treatment should be adopted as if the inflammation were acute, any vegetations, abscesses, or other gross lesions having been previously removed. Cocainisation of the urethra is necessary before the lavage is commenced and very weak solutions of permanganate of potassium and of perchloride of mercury are the most useful. When success does not follow, some lesion, such as a granulation or polypus, must be sought for and removed. In cases of chronic urethritis in which some organism other than the gonococcus is present similar treatment should be adopted and even when no microbe is present lavage should be used. In all cases the only internal treatment should be the administration of urotropin and arheol after the local treatment has ceased.

Mr. REGINALD HARRISON (London) read a paper on

*Surgical Interference in Medical Nephritis.*

He said that tension in itself may do permanent harm to the kidney, as in acute inflammation and in chronic inflammation, also where the capsule is thickened and contracted. In some forms of renal inflammation therefore surgical interference may be useful and the indications are: (1) progressive signs of kidney deterioration, as shown by the persistence or increase of albumin when it should be disappearing from the urine; (2) actual or threatened suppression of urine; and (3) where a marked disturbance of the heart and circulatory system occurs in the course of inflammatory renal disorders. As to which kidney should be selected for operation it is not material unless pain is present on one side. Usually the relief of tension in one kidney aids the other. In one case where acute suppression of urine followed an operation for internal urethrotomy there was intense pain over one kidney. Mr. Harrison did a renal capsulotomy and this was followed by the restoration of the urinary secretion and recovery of the patient, though only three ounces of blood-stained urine had been excreted in the 54 hours intervening between the operation on the urethra and the division of the capsule of the kidney. The operation consists in the exposure of the kidney by a lumbar incision and in a linear incision through the capsule two or three inches long; a drainage tube is then inserted so as to remain in contact with the kidney and the wound is sutured and dressed.

Dr. ALFRED POUSSON (Bordeaux) read a paper on this subject and said that four operations have been suggested for acute nephritis—namely, nephrectomy, total or partial, nephrotomy, and decapsulation. Nephrotomy acts by relieving tension and by local bleeding. Decapsulation only reduces the compression of the kidney. The mortality of all forms of surgical interference is only 15·4 per cent. and the patients who have survived the operation have done well. This mortality justifies surgical intervention in acute nephritis, but only in severe cases which have failed to respond to medical treatment. Acute nephritis is often unilateral and the affected side can generally be diagnosed, especially by means of cystoscopy and separation of the urines of the two kidneys. In cases where both kidneys are affected the treatment of one often relieves the other. Nephrotomy is the operation of choice for acute nephritis. Nephrectomy should be reserved for cases where there are severe lesions limited to a single kidney. Decapsulation is much inferior to incision of the kidney. In chronic nephritis surgical intervention can do much but it should only be employed where medical treatment can do no more. Nephrotomy is less dangerous than decapsulation and it should be preferred. It is difficult to speak with certainty but decapsulation seems to be the only operation which gives a hope of a radical cure of chronic nephritis but it is best to combine with it a unilateral nephrotomy.

Dr. FÉLIX LEGUEU (Paris) read a paper on

*The Surgical Treatment of Prostatic Hypertrophy.*

He said that when the prostate is hypertrophied prostatectomy is the only operation which deserves consideration and it is specially indicated when the hypertrophy has caused chronic retention and regular catheterisation has become necessary. There are two operations, the perineal and the suprapubic; of these two the perineal route is less dangerous but it is not always successful, while the suprapubic method is more dangerous, but if the patient recovers he will be completely cured. Dr. Legueu certainly prefers the suprapubic method and he considers this method indicated in all cases where the prostate is large and projects into the bladder; the suprapubic operation is also preferable when the middle lobe is well marked; also in cases where the enlargement is definitely adenomatous and therefore the prostate can be enucleated. The condition of the patient must also be considered and the stronger and younger patients are more suited to the high operation. The perineal operation is indicated where much sepsis is present as the bladder is better drained.

Dr. ALBERT FREUDENBERG (Berlin), in his paper on this subject said that there is no method of treatment which is applicable to all cases of prostatic hypertrophy, though in turn several operations have been acclaimed as the best method. There is no doubt that vasectomy is the least dangerous but the results are very poor. On behalf of Bottini's operation it may be said that patients are more willing to undergo it and therefore it can often be done before infection of the urinary passages has occurred. It causes less interference than prostatectomy and can be carried out with local anæsthesia. Moreover, sexual power is not lost and there is no risk of a permanent urinary fistula. In favour of prostatectomy it may be said that it needs no special experience in urinary surgery or special instruments and that there is less risk of recurrence than in Bottini's operation. On the whole, Dr. Freudenberg considers that Bottini's operation is a milder operation than prostatectomy and therefore more suited for weak and elderly patients; it should also be used in young patients when it is desirable not to interfere with the sexual power. It is also suited for small and middle-sized prostates. Where it is not

possible to gain an idea as to the size of the prostate before the operation the suprapubic method is preferable.

## OPHTHALMOLOGY.

### *Secondary Cataract.*

Professor N. MANOLESCU (Bucharest) read an interesting paper upon this subject before the section in which he dealt fully with the causes of secondary cataract, its different anatomical and pathological features, the operative procedures recommended with their prognosis, and the preventive courses that can be adopted. The causes are most commonly direct irritation, which prevents the absorption of lenticular fragments remaining after cataract extraction, and indirect irritation or infection from syphilis, tuberculosis, gout and albuminuria, or rheumatism. Operation for secondary cataract Professor Manolescu considered to be invariably a serious one and one that is followed in the experience of different operators by many complications, such as inflammation more or less grave of the corneal wound, of the iris, choroid, and ciliary processes, panophthalmia, sympathetic ophthalmia, and tertiary cataract. He proceeded to summarise briefly the procedures usually adopted by various authorities for avoiding these unfortunate sequelæ and considered that the preventive methods might be summarised under six heads: (1) the original extraction should be as complete as possible, only ripe cataracts being operated upon; (2) a large fragment of the anterior capsule should be removed; (3) appropriate measures must always be taken against infection, especially of the ciliary region; (4) the posterior capsule must be incised after the complete cessation of all post-operative irritation if the formation of secondary cataract is suspected; (5) where complete removal of all lenticular fragments has been impossible mydriatics should be used until their disappearance; and (6) all individual diatheses must be appropriately treated.

### *Intra-ocular Tuberculosis.*

Mr. E. TREACHER COLLINS (London) read a report upon this subject based upon his own clinical and pathological experience, with quotations from the writings of others where these have been imperfect or incomplete. He said that he had collected 18 cases in which the eye had been excised for intra-ocular tuberculosis, the specimens of which were preserved in the Royal London Ophthalmic Hospital, and a tabular statement of the clinical and pathological details of these cases will be published in the official Transactions of the Congress. After briefly showing that intra-ocular tuberculosis had been recognised for at least 100 years and been diagnosed ophthalmoscopically for 50, Mr. Collins pointed out that at the present time we possess three tests—the histological, the experimental, and the bacteriological—by which the tuberculous character of a growth in the eye can be determined. A new growth in the eye showing histologically the aggregation of cells, known as giant cell systems, and also areas of caseation, may be almost certainly pronounced tuberculous. Experimental tests by inoculation from eyes affected with tubercle give such uniform results that this method must be regarded as one of the most certain that we possess. Bacteriological tests are not so sure, for failure to find the specific bacillus in cases of undoubted tuberculosis of the eye has been a common experience among excellent observers and skilled microscopists. The bacilli in some cases are very limited in number and may easily escape detection. With regard to the modes of origin of intra-ocular tuberculosis, Mr. Collins points out that there is much still to be debated. Several cases of exogenous infection of the conjunctiva with tubercle as the result of wounds have been recorded; there are cases reported of tuberculosis of the iris following perforated wounds; Greef has described a case of auto-infection of the cornea; endogenous infection of the eye with tubercle in acute disseminated tuberculosis has been pointed out as occurring in the choroid by Cohnheim and less frequently in the iris; while there are cases in which tuberculosis appears in the eye without any previous sign of the disease in the body elsewhere. The origin of these cases is of considerable practical importance, as the treatment to be adopted may be largely influenced by the view taken as to the primary or secondary origin of the affection of the eye. Sex appears to have no predisposing influence and further evidence is required as to the frequency with which an injury precedes the condition before this can be accepted as a predisposing cause. The frequency with which intra-ocular tubercle occurs, with or without other clinical manifestations of tuberculosis, is not yet determined. Diagnosis is often very difficult, nor is it decided exactly what lesions of the choroid are to be regarded as tuberculous, but although most writers speak of intra-ocular tuberculosis as a very rare disease there can be no doubt that the modern tendency is to recognise a much larger number of affections of the eye as falling within this category. The treatment is remedial or operative. Mr. Collins considered that in the light of the recent researches of Professor A. E. Wright on the opsonic power of the blood further investigation is required into the subject of the treatment of intra-ocular tubercle with tuberculin. As regards operative treatment the indications are not very simple. If the intra-ocular condition is primary enucleation would seem a reasonable course, but occasionally the tuberculous infection which previously had been confined to the eye, appears to become disseminated by operation. Again, it is not easy to say if the intra-ocular manifestation is primary, and if other infection is present it would manifestly be wrong to remove the eye while useful vision was retained in it and there were no symptoms of sympathetic ophthalmia.

## THE GENERAL ASSEMBLY OF THE INTERNATIONAL ASSOCIATION OF THE MEDICAL PRESS.

(FROM OUR SPECIAL COMMISSIONER.)

Lisbon, April 18th.

### THE MORNING SITTING.

To the International Association of the Medical Press appertains the honour of having inaugurated the great hall of the new School of Medicine. The first meeting held and the first speeches pronounced in this magnificent building were those of the representatives of medical journals of different European and South American nations. Here on the dais ascended, on the morning of April 17th, Señor Abel d'Andrade, the General Director of Public Instruction and professor of law at the University of Coimbra, who came to represent the Portuguese Government. By his side sat Dr. Carlos M Cortezo, President of the International Association of the Medical Press; Dr. R. Blondel, the general secretary; and Professor Miguel Bombarda, general secretary of the Fifteenth International Congress of Medicine. The other members of the association sat on a double row of chairs that had been placed facing the platform.

Professor BOMBARDA opened the proceedings by expressing his satisfaction in welcoming to Portugal the representatives of the medical press of so many different countries. He said that being himself a journalist he had every reason to be sincere in such good wishes. He hailed with delight the representatives of what he believed was the most powerful lever in human society. In this he felt that he had the support of the whole population of Portugal, and though they were a small people they had large hearts. In the work of organising the medical press he hoped that the members present would realise that in the past they had been too exclusively professional. It was now urgently necessary to go beyond such narrow limits. They represented, in the first instance, the interests of medical men but these would be best served by considering the interests of civilisation as a whole. Their professional interests were to be discussed in association with those of the community at large. Certainly the first duty of the medical practitioner was to treat the sick but there was a still higher cause to serve. The profession must go beyond narrow professional limits and study its part, its function, its general relationship with the collectivity by which it was surrounded, the social life and the needs of society. In saying these words the thought of his venerated master came upon him; he remembered Virchow who had created social medicine. It was when he went to Silesia to study the terrible epidemic of typhus fever that Virchow founded a medical journal to defend the interests of the poor and the abandoned, the victims of hunger fever. He saw the great misery that then prevailed and understood how little medicine was of use in the face of starvation. After 30 years, during which time the medical press of Portugal had devoted itself almost exclusively to purely technical professional matters, they were to-day taking up the traditions

of Virchow and giving a larger part in their columns to social medicine.

Dr. CARLOS M. CORTEZO followed, recalling the history of the association, how the idea germinated at Rome and gave rise to the Congress held at Paris in 1900, the meeting of the conference at Monaco, and the final constitution of the International Association at Madrid. The first act of the newly created body was an act of courtesy. They had nominated him as its president. He was pleased to have one more opportunity of expressing his gratitude for this compliment paid to Spain in his person. He was the more gratified that as president he had the joy of being able, in the name of the medical press of the whole world, to thank the Portuguese press and the Portuguese medical profession for all that they had done, and so well done. He hoped that in the present gathering they would have opportunities of proving their disinterestedness.

Dr. R. BLONDEL, as general secretary, was called upon as the next speaker. He rose, however, protesting that he was a worker and not a speaker. He only desired to make a business statement. He wished to explain that they were not more numerous because this was not a congress but a statutory meeting of the association. At Paris in 1900 it was necessary to study the general question and to try to found a society, so a congress was held with its doors open to all comers. Even then no further progress was accomplished than that of nominating a committee to draw up statutes. These had to be discussed and adopted by the conference of Monaco so as to be submitted for final approbation at the Madrid Congress. Now that the association was founded, there was no further need of congresses to found it. At a general assembly such as the present all members of the association might attend; as a matter of fact, however, most of the branches or different nationalities had contented themselves in sending their delegates. This proved the trust and confidence reposed in these delegates. There were some important matters on the agenda, and notably the publication of journals for advertisement purposes and their gratuitous distribution. In conclusion, he had to thank Professor Bombarda for his courtesy. He came all the way to Berne from Lisbon to discuss how matters could be organised for the best advantage of the press; this, too, at a time when he was already fully occupied organising the forthcoming International Congress of Medicine. As to the future, the part which the International Association of the Medical Press could play was enormous; its potentialities, however, would be all the greater, the great purpose to which Professor Bombarda alluded would be the more readily fulfilled, if, at first, they moved forward with prudence and circumspection.

Councillor ABEL D'ANDRADE, the General Director of Public Instruction, then rose and explained that he spoke in the name of the Portuguese Government. The Government was glad to inspire itself by the perusal of the medical press. It was the mission of the Government to translate into decrees and laws what the medical profession had proved to be necessary for the welfare of the community. In its series of conferences and congresses the press, that fourth voice in the State, had striven to preserve knowledge, to disperse ignorance, and to convey equally to the cottage of the poor as to the mansion of the rich the light shed by the advance of science. The press had the highest rôle. It had not only to follow the discoveries of science but to explain the causes of disease and to suggest the remedy not merely of such sickness but of those evil social and economical conditions which were the cause of disease. He expressed the hope that the press would give to the Government the force necessary to attempt the needed reforms.

The meeting then adjourned without the usual round of speeches from the representatives of the different nationalities.

A group of prominent members of the International Association of the Medical Press. The seven in the back row, reading from left to right, are:—Professor Cornil (Paris); Professor Posner (Berlin); Councillor Abel d'Andrade, Director-General of Public Instruction (representing the Portuguese Government); Dr. Carlos M. Cortezo (Madrid), former President of the International Association of the Medical Press; Professor Miguel Bombarda, General Secretary of the Fifteenth International Congress of Medicine; Dr. R. Blondel (Paris), General Secretary of the International Association of the Medical Press and Paris Correspondent of THE LANCET; and Dr. Alfredo Luiz Lopez, Treasurer of the Fifteenth International Congress of Medicine. The ten in the front row, reading from left to right, are:—Dr. Antonio de Azevedo, Assistant Secretary of the Fifteenth International Congress of Medicine; Mr. Adolphe Smith, THE LANCET; Mr. H. W. Armit, *British Medical Journal*; Dr. Déjace (Belgium), *Le Scalpel*; Professor Daniel de Mattos of the University of Coimbra; Professor J. J. da Silva Amado (Lisbon); Dr. Azevedo Neves, Assistant Secretary of the Fifteenth International Congress of Medicine; Dr. Guevedo (Mexico) Editor of the *Escola de Medicina*; Dr. Bettencourt Ferreira (Lisbon), *Journal of the Society of the Medical Sciences*; and Dr. Fisac (Spain), *El Siglo Medico*.

### THE AFTERNOON SITTING.

It was not before the afternoon meeting held on April 17th that the real work began. Dr. CARLOS M. CORTEZO,

on taking the chair, at once called upon the general secretary, Dr. BLONDEL, to read the minutes of the last meeting of the International Committee. This, it will be remembered, was held at Berne on April 27th and 28th of last year. These minutes having been approved, proofs of the annual report were submitted and it was explained that each member of the association would receive a copy from his national secretary who would also have a few spare copies to be sold for one franc to anyone desiring the same. Dr. Blondel concluded by proposing that, as the Association of the Portuguese Medical Press now numbered 20 members, representing eight medical periodical publications, they should be entitled to two instead of one representative on the International Committee. This suggestion was readily accepted. Dr. Blondel then said that the first business was the election of the officers of the association and some conversation arose as to the unsatisfactory condition of affairs in regard to the assistant secretary and treasurer who had failed to apply to the affiliated associations for their subscriptions and was not in attendance on the present occasion. Explanations were given as to the heavy family bereavements and the precarious state of health of the treasurer.

Mr. ADOLPHE SMITH rose and argued that before the elections it was indispensable to come to a decision as to the proposal which it was his duty to make on behalf of the Association of the British Medical Press. It was their opinion that the present arrangement was not satisfactory and that it was desirable to modify the last clause of Article V., Chapter II., of the statutes of the International Association of the Medical Press adopted by the Conference of Monaco. Therefore he now proposed to abrogate completely the last paragraph of Article V. worded as follows:—

> The headquarters of the association is fixed at Brussels. The assistant secretary and treasurer is alone obliged to reside in Belgium.

In the choice of their officers they must select those who were best able to render efficient service and this they might not be able to do if their choice was limited to one nationality.

Dr. DÉJACE (Belgium) did not oppose this proposal but he deeply deplored the fact that it had been thought necessary to make it. Formerly Belgium had been selected because it was neutral ground and geographically the most convenient place to meet.

Dr. BLONDEL pointed out that in practice half the proposal had been carried out. The last meeting of the committee was held at Berne and not at Brussels, this having been found more convenient.

Professor POSNER said that the British proposal amounted to legalising what in practice they had already been doing. There was no idea whatsoever of criticising the Belgians but they must be practical and win back their freedom of action. Rules were not eternal and should only be maintained so long as they proved useful, therefore the Germans and Austrians agreed to the proposal.

Professor CORNIL supported Professor Posner and thought that the treasurership should be transferred to one of the nations that had rendered the most service—France, Germany, or Great Britain.

The motion abolishing the last paragraph of Article V. quoted above was then carried unanimously.

Mr. SMITH thereupon rose again and said that now that the motion had been carried he was most anxious to express his high appreciation of their close neighbours the Belgians and of the many eminent services which they had rendered to the advancement of science and progress. Doubtless in Belgium very competent treasurers could be found, notably Dr. Déjace himself, but they felt that they could scarcely ask another Belgian to accept the post in the circumstances, and therefore the difficulties would be easiest overcome by looking for help in this respect to some other nation.

These remarks were well received as all present were most anxious not in any way to hurt the feelings of their Belgian colleagues. Dr. DÉJACE then rose and expressed his gratitude for the expressions of sympathy and friendship that had been uttered and the incident ended harmoniously.

The committee then proceeded to select its president. Professor Posner was elected by acclamation; nevertheless, and so as to avoid establishing a precedent which might prove awkward on other occasions when less unanimity might prevail, the committee proceeded to vote again and by secret ballot with precisely the same result. Professor Bombarda (Portugal), Dr. Déjace (Belgium), and Dr. Ascoli (Italy) were elected vice-presidents; Dr. R. Blondel (France), of course, was enthusiastically reappointed general secretary; and Dr. Dawson Williams (Great Britain) was elected as treasurer.

The next question was where the committee should meet in 1907. The British representatives invited the committee to meet in London just before the Second International Congress on School Hygiene which will hold its session from August 5th to 10th, 1907, in that metropolis. This proposal was accepted. It was also decided that the head office of the International Association of the Medical Press should be at the Bureau des Renseignements of the Paris Sorbonne. This gave Mr. Smith an opportunity of complimenting Dr. Blondel on his admirable organisation of the bureau and the services which it had already rendered to students and travellers from all countries. If the same success attended the organisation of the association of the medical press great would be the work accomplished.

Dr. BLONDEL replied that such success did not depend on him but on the nations affiliated. For instance, the Italians were quarrelling among themselves and had founded two rival national associations of the Italian medical press, with the result that neither of these bodies had sent representatives to the present meeting.

This concluded the work of the International Committee and the doors were then opened to any members of the association with the result that several Portuguese, Spanish, Mexican, and Brazilian members came into the room where the Committee had been sitting. Dr. Mendoza and Dr. Lara had papers to submit but were not present. The question of those journals that professed to be medical journals but were issued by manufacturers and distributed gratuitously so as to serve as advertisements for their wares was taken up for discussion.

Dr. BLONDEL inquired whether it would be possible to refuse the insertion in genuine medical journals of advertisements that appeared in these gratuitous prints.

Professor CORNIL remarked that these papers reproduced articles from legitimate papers. If they were promptly prosecuted for so doing such action would wreck such scissors-and-paste journalism.

Dr. DÉJACE maintained that if reproduction was theoretically forbidden, in practice the tribunals did not enforce the law. In any case the Berne Convention only protected the literary form, whereas in science it was the fact that had the chief value and the description of a new fact or theory could be reproduced anywhere if a somewhat different phraseology was employed.

Mr. H. W. ARMIT said that the Americans were the chief sinners so far as the English language was concerned and against them there was no possibility of legal action.

A motion was proposed by Professor CORNIL, seconded by Dr. BLONDEL, as follows:—

> As a commencement of the struggle against the invasion of gratuitous journalism the general assembly of the International Association of the Medical Press recommends that each journal belonging to the association should inscribe, on its first page, an announcement that the reproduction of the articles contained in the issue is forbidden to all medical journals that do not belong to the International Association of the Medical Press.

This was adopted.

The next question was termed "internal publicity"—namely, the growing demands made by advertisers for favourable notices in the body of the paper. The advertisers complain that their usual advertisements are torn out when the journals are bound up in a volume. Others say such notices deceive no one and are obviously advertisements. But now, Dr. Blondel urged, there was an ever-increasing demand for articles written in such a manner that they would deceive. Scientific books were sent with the request that they should be reviewed and if this was not done the advertisements were withdrawn. Some check must be put on these growing exigencies.

Professor POSNER urged the difficulty of drawing the line between genuine scientific articles and equally scientific articles that might be construed as advertisements. The more important papers refused to analyse over and over again the same products. But some of the manufacturers had laboratories and highly scientific men in their employ where work was done which was quite equal to that of a university or a faculty. So the matter would always remain a question of the value of the individual author and of the article. There was, he feared, no other solution than that which depended on the competence of the editor. It was above all

necessary to prevent the editor from being influenced by the publisher.

After a considerable amount of conversation on this subject it was ultimately decided that a report should be prepared for the next meeting and the assembly then adjourned till the morrow.

*(To be continued.)*

## VITAL STATISTICS.

### HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8332 births and 5250 deaths were registered in the week ending April 21st. The annual rate of mortality in these towns, which had been equal to 17·0 and 17·1 per 1000 in the two preceding weeks, further rose last week to 17·3. In London the rate was 19·2 per 1000, whereas the mean rate in the 75 other large towns did not exceed 16·5. The lowest death-rates in these towns during the week were 6·9 in Bournemouth, 7·8 in Wolverhampton, 9·3 in Southampton, and 9·6 in Tottenham; the rates in the other towns ranged upwards to 23·1 in Tynemouth, 23·2 in Coventry, 23·4 in Middlesbrough, 23·6 in Liverpool, and 25·9 in Bromley. The 5250 deaths in the 76 towns included 519 which were referred to the principal infectious diseases, against 457 and 518 in the two preceding weeks; of these, 214 resulted from measles, 133 from whooping-cough, 58 from diphtheria, 48 from diarrhœa, 47 from scarlet fever, 18 from "fever" (principally enteric), and one from small-pox. The deaths from these diseases were equal to an annual rate of 1·7 per 1000 in the 76 towns and to 1·9 in London. No death from any of these infectious diseases was registered last week in Hastings, Brighton, Bournemouth, Southampton, Reading, or in eight other large towns; while they caused the highest death-rates in Bradford, Bristol, Preston, Liverpool, Walthamstow, and Burnley. The highest death-rates from measles during the week occurred in Liverpool, Preston, Walthamstow, and Burnley; from whooping-cough in Bristol, Aston Manor, Merthyr Tydfil, West Bromwich, Burnley, and Coventry; from diphtheria in Walthamstow and Halifax; and from diarrhœa in Warrington. The highest death rates from scarlet fever occurred in Middlesbrough and Sheffield. "Fever" showed no marked fatality in any of the large towns, and one fatal case of small-pox occurred in Plymouth. The number of small-pox cases remaining under treatment in the Metropolitan Asylums Hospitals were still seven at the end of last week, one new case having been admitted during the week. The number of scarlet fever cases under treatment in these hospitals and in the London Fever Hospital on Saturday, April 21st, was 2225, showing a further decline from numbers decreasing steadily from 2628 to 2301 in the six preceding weeks; 288 new cases were, however, admitted during the week under notice, against 270 in the previous week. The deaths referred in London to pneumonia and other diseases of the respiratory organs, which had been 332 and 357 in the two preceding weeks, further rose last week to 399 and exceeded by 104 the corrected average for the corresponding week in the four preceding years, 1902-05. The causes of 51, or rather less than 1 per cent., of the deaths registered during the week in the 76 large towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Bristol, Leicester, Nottingham, Salford, Bradford, Hull, Newcastle-upon-Tyne, and in 48 other large towns; whereas the proportion of uncertified deaths showed a considerable excess in Birmingham, Coventry, Liverpool, Sheffield, Sunderland, and Gateshead.

### HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 19·4 and 19·1 in the two preceding weeks, further declined to 17·6 during the week ending April 21st, but exceeded by 0·3 the mean rate during the same week in the 76 large English towns. The rates in the eight Scotch towns ranged from 10·6 and 13·1 in Perth and Aberdeen to 18·5 in Glasgow, 19·6 in Dundee, and 20·6 in Greenock. The 624 deaths in these eight towns included 15 which were referred to measles, 14 to whooping-cough, 12 to diarrhœa, seven to diphtheria, four to "fever," one to scarlet fever, but not one to small-pox. In all, 53 deaths resulted from these principal infectious diseases during the week, against 51 and 54 in the two preceding weeks. These 53 deaths were equal to an annual rate of 1·5 per 1000, which was 0·2 below the mean rate during the week from the same diseases in the 76 large English towns. The fatal cases of measles, which had been 27, 20, and 23 in the three preceding weeks, declined last week to 15, of which eight occurred in Glasgow, three in Edinburgh, and two in Dundee. Of the 14 deaths from whooping-cough, which exceeded by two the number returned in each of the two previous weeks, ten were recorded in Glasgow. The deaths referred to diarrhœa, which had been 15 and 11 in the two previous weeks, were 12 last week, and included five in Glasgow and three in Edinburgh. Four of the seven fatal cases of diphtheria occurred in Glasgow, as did three of the four deaths referred to fever, which included two attributed to cerebro-spinal fever. The deaths in the eight towns referred to diseases of the respiratory organs, including pneumonia, which had been 142 and 170 in the two previous weeks, declined last week to 140, but exceeded by 14 the number referred to these diseases in the corresponding week of last year. The causes of 13, or rather more than 2 per cent., of the deaths registered in the eight towns during the week were not certified, the proportion of uncertified deaths in the 76 English towns being less than 1 per cent.

### HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 26·1, 21·1, and 23·4 per 1000 in the three preceding weeks, further rose to 28·1 during the week ending April 21st. During the 13 weeks of last quarter the death-rate in the city averaged 22·9 per 1000, against 16·6 and 17·4 in London and Edinburgh; and during the first three weeks of the current quarter the Dublin death-rate has further increased of 24·2. The 204 deaths of persons belonging to Dublin registered during the week under notice showed an increase of 26 upon the number returned in the previous week, and included six which were referred to the principal infectious diseases, against four and six in the two preceding weeks; of these three resulted from measles, two from "fever," one from diarrhœa, and not one either from small-pox, scarlet fever, diphtheria, or whooping-cough. These six deaths from the principal infectious diseases were equal to an annual rate of but 0·8 per 1000, while the rate last week from the same diseases were equal to 1·9 in London and 1·4 in Edinburgh. The three fatal cases of measles showed an increase upon the numbers in recent weeks, as did the two deaths referred to "fever," probably enteric. The 204 deaths included 25 of infants under one year of age and 78 of persons aged upwards of 60 years; the deaths both of infants and of elderly persons showed a marked increase upon the numbers in the two previous weeks. Nine inquest cases and four deaths from violence were registered; and 87, or 43 per cent., of the 204 deaths were recorded in public institutions. The causes of six, or 3 per cent., of the deaths registered during the week were not certified, either by a registered medical practitioner or by a coroner.

## THE SERVICES.

### ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Staff Surgeons: E. Sutton to the *St. George*, on recommissioning, and E. S. Tuck to the *President*, for three months' course at Guy's Hospital. Surgeons: F. L. de Verteuil to the *Hogue*, on completing; N. H. Mummery to the *Latona*; J. Verdon to the *Hyacinth* and M. T. Male to the *Russell*, both on recommissioning.

### ROYAL ARMY MEDICAL CORPS.

Lieutenant Percy Farrant, from the Seconded List, to be Lieutenant (dated April 1st, 1906).

The following have been appointed medical officers, London Recruiting Area: Lieutenant-Colonel H. Scott, retired pay, and Lieutenant-Colonel R. H. Hall. Captain A. C. Lupton, from Newcastle-on-Tyne, has been appointed to the 1st Life Guards. Lieutenant L. Bousfield has been selected for employment with the Egyptian Army.

### THE ROYAL ARMY MEDICAL (MILITIA) CORPS.

The Army Council has decided that it is necessary to

encourage the non-commissioned officers and men of the Royal Army Medical (Militia) Corps to qualify as cooks, both for hospital and general purposes, and has directed that a sufficient number shall be trained at selected military hospitals to maintain an establishment of two cooks per company, the period of instruction being three months.

VOLUNTEER CORPS.

*Rifle:* 1st Volunteer Battalion the Northumberland Fusiliers: Surgeon-Major J. P. Elliot is granted the honorary rank of Surgeon-Lieutenant-Colonel (dated April 11th, 1906); Surgeon-Major and Honorary Surgeon-Lieutenant-Colonel J. P. Elliot resigns his commission, with permission to retain his rank and to wear the prescribed uniform (dated April 11th, 1906). 5th (Glasgow Highland) Volunteer Battalion the Highland Light Infantry: Surgeon-Major A. Macphee to be Surgeon-Lieutenant Colonel (dated April 11th, 1906).

THE KING'S BIRTHDAY.

Notice is given in the *London Gazette* that the King's Birthday will be celebrated in London and at all Home Stations on Friday, June 29th next. At all other stations His Majesty's Birthday will be celebrated on Friday, Nov. 9th next.

PATRIOTISM AT THE UNIVERSITIES.

In the April number of the *University Review* Sir William Ramsay has written an article entitled "Patriotism at the Universities." It is an earnest plea for a scheme whereby men while at the university should be able to undertake to fit themselves for service in defence of their country. He reminds his readers that in Germany those who have passed the "Abiturientenexamen" of the high schools (gymnasia or oberrealschulen), which is equivalent to matriculation at our universities, are allowed not only to limit their time of service to one year but it is made easy for them to serve during one of their years of study. Their hours of compulsory drill are made to fit their hours of study. And further, he asks, "Could we not form the habit of devoting one of our university years to shooting and drill?" We see that the editor of the *University Review* invites discussion upon this important suggestion and we await the result of the discussion with interest. For nearly 900 years no foreign invader has set foot on English soil and possibly we have become lulled into a false security. It may be true that the British people will never agree to universal military service but surely it is not too much to ask that every able-bodied man should, say between the ages of 18 and 25 years, give up one year of his time to learning to shoot straight and to perform simple military evolutions. One of the greatest strategists of the last century said that it was perfectly easy to get an army into England but almost impossible to get it out again. If Sir William Ramsay's scheme were adopted other classes than those who go to the universities would probably follow suit and in that case an invader would probably never penetrate far into the country even if he succeeded in landing.

THE ROYAL NAVAL HOSPITAL, STONEHOUSE, PLYMOUTH.

Lord Tweedmouth and the other Lords of the Admiralty made a visit of inspection to the Royal Naval Hospital, Stonehouse, on April 10th. They were received by Inspector-General J. C. B. Maclean, Deputy-Inspector-General L. H. Kellett, and Deputy-Inspector-General C. James. Fleet-Surgeon W. Eames, Staff Surgeon M. L. B. Rodd, and several other officers were also present. Lord Tweedmouth visited the medical and surgical wards. The sick officers' quarters were seen and also the improved blocks of buildings, which have been practically rebuilt, with their annexes and sanitary arrangements. Lord Tweedmouth, who remained a considerable time in the hospital, was much pleased with his inspection.

ROYAL ARMY MEDICAL CORPS FUND.

The *Army and Navy Gazette* states that the fourth general meeting of subscribers to the Royal Army Medical Corps Fund will be held in the theatre of the Royal United Service Institution on Monday, June 18th, at 3 P.M. The Director-General will preside. It is hoped that officers will freely express their views on any points connected with the fund which they may wish discussed. Those officers who wish for information on any special point are asked to communicate with the honorary secretary, Lieutenant-Colonel B. M. Skinner, at 68, Victoria-street, London, S.W., in order that facts and figures may be furnished in response to any question asked.

THE TEETH OF ARMY RECRUITS.

In future the teeth of army recruits will be tested not from the standpoint of a campaign like that in South Africa but from the general average conditions of European warfare.

SPANISH MILITARY HYGIENE.

Dr. E. Alonso G. Sierra, a Spanish military surgeon, writing in the *Revista de Sanidad Militar*, deplores the great want of cleanliness in the army. The soldiers scarcely ever take a bath or brush their teeth, and are not accustomed to wash their hands before their meals, added to which there is a most deplorable want of cubic space in the barrack-rooms. Were these matters rectified and a more liberal supply of easily assimilable proteids allowed in their rations he thinks that the present high mortality would be decreased by something like 95 per cent.

# Correspondence.

"Audi alteram partem."

## ANTERIOR OR POSTERIOR GASTRO-JEJUNOSTOMY?

*To the Editors of* THE LANCET.

SIRS,—In THE LANCET of April 14th, p. 1071, Mr. B. G. A. Moynihan maintains that I replied to, but did not answer, the arguments and criticisms in his former letter. This is a matter of opinion which I leave to the judgment of your readers. With your permission I will endeavour to reply to the arguments which Mr. Moynihan now puts forward. In his first paragraph Mr. Moynihan evades my point that the no-loop operation has not been practised long enough to warrant a definite decision as to its value. He next remarks that "the operation of gastro-jejunostomy, if one may judge from published reports, is not so frequently performed in London as elsewhere." *Possibly* we are behind the times, although I think that published reports are not a trustworthy indication of the volume of work done, inasmuch as surgeons in London, whether from pressure of work or from disinclination, are very sparing as to the reports of cases which they publish. The great bulk of the cases are buried in the oblivion of hospital notes. Mr. Moynihan tells me that if I will look further afield I shall discover that the posterior operation with no loop is really the operation usually performed. I can only say that a careful search through the literature of the subject leads me to an opposite conclusion. In preparing my lectures I communicated with surgeons all over the country and I gathered from my inquiries that the no-loop operation is not commonly employed.

As regards Dr. Mumford's case, it is quite true that it was an instance of an anomaly of the duodenum, in that the fixed portion of the duodenum ended on the right side of the spinal column instead of on the left. This, however, I submit, does not affect the conclusion to be drawn from the record. The case is, as Mr. Moynihan admits, an argument against the no-loop operation. It illustrates the danger of fixing the jejunum to the stomach without the play afforded by a loop. As Dr. Mumford remarks, "The play allowed to the movable stomach and jejunum was limited by the short radius—the ligament of Treitz to the anastomotic opening—afforded by the three-inch limb of jejunum." In other words, the no-loop operation is mechanically incorrect. Mr. Moynihan maintains that the condition found would have vitiated an anterior probably as much as a posterior operation. Even that fertility of imagination with which Mr. Moynihan kindly credits me does not enable me to conceive how, with the play afforded by the 12-inch loop of an anterior operation, the colon could be constricted, especially as in this particular case the stomach appears to have contracted in a lateral rather than in a vertical direction.

I am surprised to learn that Mr. Moynihan has adopted the method of stitching for two and a half years, for I find from his published records that one of his cases of gastro-jejunostomy performed in December, 1903, was operated on subsequently for an internal hernia through the aperture in the mesocolon. As gastro-jejunostomy in this case was performed less than two and a half years ago, I suppose that Mr. Moynihan must have stitched the jejunum to the

mesocolon, and yet a hernia followed. I have no doubt that the method advocated by Mr. Moynihan is effectual so far as the immediate prevention of hernia is concerned, but I think we require further evidence that in every case the opening remains permanently closed. All surgeons are familiar with the readiness with which intestinal and omental adhesions become stretched. Surely such an event is possible when a structure like the mesocolon is stitched to contractile viscera such as the stomach or jejunum?

As regards regurgitant vomiting Mr. Moynihan maintains that the proximal jejunal limb becomes waterlogged. Mr. Moynihan, I admit, did say this in his first letter but I was loath to do him the injustice of believing that he really meant that waterlogging was the primary factor. Is there a particle of evidence that a healthy piece of intestine can become waterlogged apart from mechanical obstruction or paralytic distension? The whole of the small intestine is a series of loops. Do these loops ever become waterlogged apart from the conditions mentioned? I have witnessed a considerable number of necropsies on patients who have died from regurgitant vomiting and in every instance the waterlogging was clearly secondary to definite mechanical obstruction at the efferent opening. This is an observed fact; the hypothesis that waterlogging occurs as a primary condition is an ingenious speculation.

As regards peptic jejunal ulcer, I think my original contention is a perfectly fair one. I collected 19 instances, in 14 of which the anterior operation was performed, in two the posterior, in one Roux's operation, while in two the method was not stated. In the statistics given by Mr. Moynihan the disproportion is not so great, 17 instances following the anterior and six the posterior operation. I omit the cases in which an entero-anastomosis was performed, as I think it must be conceded that when this procedure is carried out peptic ulcer is more likely to occur, for the jejunal mucous membrane is exposed to the acid gastric juice unprotected by the presence of bile. In all the cases I collected gastro-jejunostomy had been performed prior to 1903. As jejunal ulcer is a comparatively remote sequel of gastro-jejunostomy, probably in all the cases yet recorded the operation had been performed not later than 1904. The point, therefore, is not whether the posterior operation is performed more frequently than the anterior at the present time (as I have no doubt it is), but whether such was the case during the period covered by the operations followed by peptic jejunal ulcer. I maintain that, so far as can be ascertained, during that period the anterior operation was more frequently performed, and this circumstance is a reasonable explanation of the greater number of peptic jejunal ulcers which have followed the anterior operation. As regards the influence of a low opening on the production of jejunal ulcer I hardly think that the difference between the eight-inch loop of the posterior and the 12-inch loop of the anterior operation is a satisfactory explanation of the disproportion of cases which have followed the two methods. Mr. Moynihan disregards my contention that jejunal ulcer following the anterior appears to be a less serious complication than when it follows the posterior operation. Mr. Moynihan refers to the first gastro-jejunostomies which he ever saw, all done by the anterior method, and he tells us that of these cases there was one superb result, and a ghastly list of failures. In his first letter Mr. Moynihan referred to the complications which followed the posterior operation before the technique had been fully developed. Surely the technique of the anterior operation has been developed also, so that it is scarcely fair to instance the results of the earlier anterior operations as a criterion of what can be accomplished to-day. Mr. Moynihan asks, "Is there a surgeon in any part of the world who can bring forward any large number of cases of the anterior operation which will compare in results, immediate or remote, with those recorded by the Mayos, Mayo Robson, Hartmann, myself, or others?" Let me quote Dr. W. J. Mayo's (an advocate, be it said, of the posterior operation) statistics of anterior gastro-jejunostomy. This surgeon and Dr. C. H. Mayo have recorded 421 cases of gastro-jejunostomy for benign and malignant disease. Of these cases 126 were anterior and 295 posterior. "The mortality," remarks Dr. Mayo, "in the anterior group was somewhat over 1 per cent. higher than in the posterior *but the percentage of secondary operations was greater after the posterior operation*. The mortality comparison is, however, hardly fair to the anterior method, as this group comprises a larger number of the earlier operations in which inexperience can be blamed for some of the misfortunes."

I trust that I do not turn a deaf ear to the evidence before me but I do believe that my senses enable me to distinguish between evidence and assertion, and I repeat that as yet I have not found any conclusive evidence to show that the results, either immediate or remote, are better after the posterior than after the anterior operation. If such evidence be forthcoming Mr. Moynihan need have no fear but that I shall act in accordance with it. Mr. Moynihan has obtained admirable results from the posterior operation. In my own smaller experience the results of the anterior operation have been excellent. I am confident that were Mr. Moynihan now to adopt the anterior method the results in his skilled hands would not be a whit inferior to those he has obtained from the posterior method in the past.

I am, Sirs, yours faithfully,
HERBERT J. PATERSON.

Upper Wimpole-street, W., April 23rd, 1906.

PS.—In THE LANCET of March 10th, p. 705, Dr. E. Cautley comments on some of the statements I made on the subject of infantile hypertrophic stenosis of the pylorus in my recent Hunterian lectures. Dr. Cautley points out that "statistical results of operations for this condition are of little value." With this remark I fully concur; indeed, in my lecture I expressed a similar view in the following words: "So much turns on the *condition of the infant* that it is impossible to estimate the relative mortality of these different procedures and it is probably on this factor and on the skill of the operator rather than on the particular operation adopted that the immediate result depends." Dr. Cautley thinks that I am inclined to give undue credence to reports of cases cured without recourse to operation. Doubtless some of the reported cures have been instances of mistaken diagnosis but I venture to think that the names of the physicians under whose care were the patients are sufficient evidence that the cases I quoted do not come under this category. Dr. Cautley is apprehensive lest my observations tend to make physicians procrastinate unduly. I trust no such evil result will ensue; such, at least, was not my intention. If, however, clinicians' diagnosis is as uncertain as Dr. Cautley suggests, procrastination may be in the interest of the patients, otherwise I fear that Dr. Cautley's insistence on early surgical treatment may lead to unnecessary operations on patients erroneously *supposed* to be suffering from this disease.

## IN PRAISE OF RUM AND MILK.

*To the Editors of* THE LANCET.

SIRS,—I am pleased to see that Dr. Francis T. Bond, in THE LANCET of April 21st, p. 1135, draws attention to the great value of this combination as what one might term a food tonic, and I am particularly pleased to see that he uses the term Jamaica rum, for between Jamaica rum and the rum which is too frequently sold (Demerara rum) there is a very wide difference indeed. I had occasion some two years ago to investigate this question of the difference in quality between Jamaica and Demerara rum, and also to investigate the therapeutic action of good rum itself. I found that Demerara rum contained a little over 60 parts of combined ethers per 100,000 parts of absolute alcohol, whereas Jamaica rum contained anything from 300 to 600 parts of compound ethers in the same amount of absolute alcohol.

I went to considerable trouble to look up old authorities on the question of the therapeutics of rum and I was somewhat astonished to find them speaking so highly of this particular spirit. It was stated by one of these authorities that rum had a more decided action than either brandy, whisky, or gin in increasing the amount of carbonic acid given off from the system. It was further stated that rum was the only alcoholic liquor which produced perspiration, and, finally, the important statement was made that rum was one of the very best alcoholic restoratives, its action being not a mere flash-in-the-pan but of a steady and conservative character. Dr. Edward Smith, Dr. James Inman, Dr. Letheby, and Dr. Ringer all agreed upon this point. The first named stated that "the old-fashioned combination of rum and milk is the most powerful restorative with which he is acquainted." Dr. James Inman stated that "for internal use in cases of phthisis and similar diseases rum and milk is far better as a means of supplying fat to the body than cod liver oil." I have tested the remedy myself in a number of cases and I can personally vouch for the truth of the matter but I repeat

the greatest care should be taken to obtain Jamaica rum and not Demerara rum.—I am, Sirs, yours faithfully,

MEREDITH YOUNG, M.D. Edin.

Stockport, April 23rd, 1906.

## THE ARMY MEDICAL RESERVE.

*To the Editors of* THE LANCET.

SIRS,—The important question of first finding the necessary material to form such a corps is clearly put by your correspondent, "War Dog," in THE LANCET of April 21st, p. 1136. There are many who, I think, will agree with me that too much is made of military training in medical matters. Surgery and medicine are essentially the same, whether practised in the navy, army, or civil life, with the exception that in the latter a wider field is essential. The skeleton of a certain necessary administration is fully provided by the Royal Army Medical Corps. The civil surgeon, on the whole, is generally admitted to have proved a complete success. Any friction which did take place, in the future will probably disappear under the vastly improving conditions of the *personnel* of the standing corps. Should another war take place there must of necessity be a further call upon the profession with the result of an equally satisfactory response. The idea of specially training a body of such men surely is unnecessary. As to a reserve of men like myself, who have seen service under all conditions at the front and in hospitals, most of us are now settled in some way or other, and I think I may say that we are not looking for further trouble unless the country cannot do without us. Carry a large water-bottle and a packet or so of common cigarettes: these are the first requirements of a wounded soldier. I have always found the officers of the Royal Army Medical Corps willing and anxious to give at short notice any special instruction which might be required. I am, Sirs, yours faithfully,

J. L. AYMARD,

Late Civil Surgeon, 7th Dragoon Guards.

Wimpole-street, W., April 21st, 1906.

*To the Editors of* THE LANCET.

SIRS,—The idea of enrolling into a medical reserve the larger number of civil surgeons who were attached to the army during the late war is a scheme which one would have thought should have suggested itself to the authorities long ago; moreover, the confidential reports possessed would have enabled a pick to be made of the many they have to choose from, to say nothing of the advantages of practical experience possessed by these men gained in actual warfare, an experience which no training could ever give to the new men. That such a scheme has presented itself to the authorities may be taken for granted and it may be of interest to ask why it has not been adopted. It will doubtless be fresh in our memories the snub which the War Office received during the course of the war to its offers of commissions in the Royal Army Medical Corps offered to the civil surgeons; it is not likely they would care to receive a second. Again, if the authorities as it seems fear a refusal to enrol from experienced men one is naturally lead to ask if the reason for such refusal is probably due to a "knowledge of good and evil" which is possessed by the civil surgeons of the real state of matters in the Royal Army Medical Corps. Hence the reason for asking young men to enlist in a reserve of a service they have no experience of the shortcomings of. A civil surgeon who has once served knows that if he joined he would be entering a service possessed of many attractions of a social and gay life, but would invariably recognise that during his term of service he would lose ground in things medical and surgical. His time of training would be spent learning military routine, administrative duties, and compiling red tape returns, but that he would gain anything in medical or surgical work he knows would be almost impossible. If, on the other hand, all administrative work—returns of sick, payment of men, checking of hospital supplies, balancing of accounts, and the other multitudinous duties which at present fill in the greater part of medical officers' time—were carried out by military officers who have passed into the reserve or have been enrolled specially, as is the case in the army pay department, the civil surgeon would then feel more inclined to join a service in which he could conscientiously bring to bear with value and interest the experience which his practice has taught him. Until some scheme is adopted by the Royal Army Medical Corps of removing clerical duties to lay shoulders so long will the corps fail to fulfil its full duties to itself and to the nation.

I am, Sirs, yours faithfully,

THE AUTHOR OF THE "ARMY MEDICAL SYSTEM," &c.

April 21st, 1906.

## CANCER GENESIS: TYROSIN AS A PROBABLE CAUSE OF LEUCOCYTOSIS IN CANCER.

*To the Editors of* THE LANCET.

SIRS,—I have noticed that under certain conditions it is possible to obtain what appears to be pure crystals of tyrosin from the juice of cancer cells and chemical experiments appear to support strongly the presence of tyrosin as Hoffmann's and Piria's reactions can be elicited. The importance of the presence of tyrosin in cancer becomes at once apparent when inquired into from the bio-physiological chemical standpoint of the initiation or cause of carcinoma and the subsequent course of the disease from a histological and clinical aspect. Tyrosin is paraoxyphenyl-α-amido-propionic acid and is the result of the prolonged action of pancreatic secretion on proteid matter. Tyrosin can be readily prepared from horn shavings by the action of sulphuric acid. Horn is an epithelial structure and the presence of tyrosin in epithelial cancer—particularly in epithelioma and mammary cancer—is not so extraordinary as it would seem. If tyrosin be decomposed we get various compounds, amongst which are paraoxyphenyl-propionic acid and β-phenyl-propionic acid. The former is hydroparacumaric acid and the latter is hydrocinnamic acid.

It is an accepted fact that the subcutaneous injection of either cumaric acid or cinnamic acid causes a well-marked leucocytosis.[1] During digestion, especially towards the end of the process in the small intestine, there is a marked leucocytosis normally taking place in the walls of the intestine and its villi. Is it not possible that the presence of tyrosin serves the purpose, amongst others, of calling up this leucocytosis, which is usually accepted as part of the method of fat absorption from the intestine, another of the results of pancreatic functions?

We here would appear to have a possible explanation of the non-inflammatory presence of leucocytes in the growing margin of a cancer and also a reason in support of my contention that the initiation of the cancer process is due to leucocytic action,[2] inasmuch as, owing perhaps to aging or faulty chemical action, epithelial cells may attract leucocytes by reason of the presence of accumulated tyrosin within or about the cells. Another most important matter bearing on the above is the fact that lately in all cases of cancer, wherever it may occur in the body, it has been stated that the mucous membrane of the stomach ceases to secrete hydrochloric acid and abundance of lactic acid is found to take its place. Now lactic acid is hydroxy-propionic acid and this fact at once points to an apparent connexion with tyrosin, which is a propionic derivative in combination with phenol, elsewhere in the body in cancer cases.

It would appear that one of two things is taking place: (1) that the stomach is trying to rid the system of the propionic radicle in an allotropic form; or (2) that the propionic radicle is being attached to a phenol radicle in the intestine and is being taken up in excess from the intestine and therefore appears in the tissues more or less free. The presence then of tyrosin in cancer tissue, especially in view of the alleged favourable action of trypsin on cancer, would appear quite compatible with the contention that the fundamental cause of cancer would probably be found to be some chemical disturbance in cell metabolism, directly or indirectly. Apart from the propionic-kresol compounds, there would appear to be also a chinolin compound allied to kynurenic acid present, as crystals which appear to be chinolinic in form have also been seen.

The above is a short *résumé* of the matter so far as I have worked at the subject at present, and further work on these lines aimed at increasing or diminishing tyrosin in cancer tissue ought to prove interesting and profitable in

[1] Drage: Subcutaneous Injection of Cinnamate of Sodium, THE LANCET, July 12th, 1902, p. 66, and May 23rd, 1903, p. 1441.

[2] Forbes-Ross: Leucocytes in Cancer Genesis, Brit. Med. Jour., October, 1905.

view of the latest experiments in cancer treatment and pathology.

I am, Sirs, yours faithfully,

F. W. FORBES-ROSS, M.D. Edin., F.R.C.S. Eng.

Harley-street, W., April 20th, 1906.

## A LIFE OF "ECLIPSE."

*To the Editors of* THE LANCET.

SIRS,—May we ask the assistance of your valuable columns to let the fact be known that the first complete life of "Eclipse" is in course of preparation and that any reference to this celebrated horse in contemporary literature, to his breeder, the Duke of Cumberland, to his purchaser, Wildman, and to his subsequent owner, Dennis O'Kelly, will be very much appreciated. Many facts have already come to light from private and unexpected sources which have enabled us to settle various questions hitherto doubtful, such as the birthplace, the burial place, the authentic skeleton, and so forth. Many more letters, documents, prints, or paintings must still exist—besides those already brought to our notice by the generosity of their possessors—which will be of the greatest value. The monograph will be as completely illustrated as possible, from contemporary paintings and engravings and other sources, and will contain detailed photographs of the anatomy of Eclipse and the most famous of his descendants, which should prove interesting both to biologists and breeders. A sketch of racing in the days when Eclipse was on the turf will be included, with biographies of his breeder, owners, and others connected with the sport of that time. It is important that information should reach us before June 1st if possible and all letters, manuscripts, prints, or pictures, addressed to "Eclipse," care of Mr. W. Heinemann, 21, Bedford-street, London, W.C., will be acknowledged before that date and will be received not only with the greatest care but with profound gratitude. Any originals reproduced will be scrupulously guarded from injury and safely returned and may be insured if necessary while out of their owner's hands if a separate message to that effect is addressed to Mr. Heinemann.

With every confidence that our efforts to collect everything known about the most famous horse ever bred will meet with indulgent and sympathetic assistance of all Englishmen who have facts to contribute,

We are, Sirs, faithfully yours,

April 19th, 1906. THE AUTHORS.

## MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

### *A Hospital Incident.*

THE evidence given at an inquest held on April 23rd by the city coroner on a 12 months old child illustrates one of the modes by which reports likely to injure hospitals are sometimes originated. The child was scalded on Good Friday and after treating him herself the mother took him to the Ancoats Hospital, having no money for private medical advice. She stripped the boy at a nurse's request and was then told she would have to obtain a "recommend." This she did and took the child the next day again to the hospital. According to the woman's statement, she was then told that she wanted horsewhipping and that the case was out of the district, and added that she subsequently obtained some money but that the child died before the medical man had seen him. This does not read very pleasantly. However, the secretary of the hospital denied the statement as to horsewhipping and said the essence of the case was that the mother wanted the child treated at home but that it was out of the house-patient district. When he saw her he told her to wait while he consulted the medical officer as to the advisability of taking the child as an in-patient but she had gone when he returned and he could not communicate with her. The coroner said that so far as the woman was concerned the whole affair was an unfortunate misunderstanding. It does not appear that the child was seen at the hospital by anyone but a nurse, who, it may be, was not effusively sympathetic, if we may judge by the impression apparently left on the woman's mind that she had been told she deserved horsewhipping. Such women are often trying and nurses are often tired; but it seems a pity that no one told this woman at first where she ought to take the child. The jury agreed that no reflection could be cast on the hospital officials and that the death was "accidental." No hospital, not even one doing such good work in a poor district as is done by the Ancoats Hospital, can always avoid "incidents."

### *Dissatisfied Antivaccinationists.*

The Northern Counties Union of Antivaccination Societies had its annual conference in Manchester on April 21st. It resolved that it felt profound surprise and disappointment at the unsympathetic attitude of the Government towards even the smallest demands of conscientious objectors to vaccination, as well as at various other enormities—as, e.g., "the callous indifference of the Home Secretary, the Lord Chancellor, and the Cabinet generally to the flagrant manner in which many magistrates persistently bully and catechise applicants for exemption certificates and refuse to give them their statutory rights." The meeting further urged efforts to be made to relieve "public servants and parents who desire to keep themselves and their children healthy from the intolerable persecution they now suffer at the hands of medical men and other officials, whose legal but monstrous business it is to corrupt the blood of the people and to make health a crime." To the sober-minded medical man who has hitherto been unconscious that it is his "legal but monstrous business to corrupt the blood of the people," towards whom, indeed, he has a kindly, benevolent feeling, the words quoted seem to belong to the category now termed "wild and whirling." These people, obsessed with one idea and impervious to any other, cannot be reasoned with. Most of them are sincere, in the sense of being terribly in earnest, so much so indeed that they shut their eyes to, or pervert, facts without any hesitation. The misfortune is that they did not live, say, a century ago, when they would have had object lessons as to the ravages of small-pox that would have saved them from the mischievous folly which they are doing their best to perpetrate. It rarely happens that cranks are eccentric, shall we say, on one point only, and it would be interesting to learn in what other directions the antivaccinationists run counter to the knowledge and common-sense of mankind.

### *Medical Man charged with Murder.*

It is happily a rare thing for a qualified medical man to be charged with a criminal offence. On April 23rd, however, Mr. C. J. Holtom, M.R.C.S. Eng., L.S.A., was committed for trial on the charge of murdering a young woman who died, it was said, after the performance of what the newspapers euphemistically call an "illegal operation." No comment can be made on the case while *sub judice*.

April 24th.

## NORTHERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENT.)

### *Dangers in Connexion with Pit Heaps.*

IN mining districts there is scarcely a village without its "pit heap," often an ugly eye-sore by day and less often the only luminous object in the black darkness of night. Only those heaps which are known to be "alive" are looked on as dangerous, familiarity having bred so great a contempt for all others that almost without exception they have become the playgrounds for the village children. But every now and then some untoward occurrence serves as a reminder that fire may linger long and be none the less likely to burn. Quite recently the whole north country was startled by the death of two old people at Pelton who were poisoned by the fumes from such a smouldering heap, while several residents in the same village were driven from their homes by the stifling dangerous fumes. Scarcely has this excitement abated before we are again reminded of the danger at our very doors by the death of a little child who was fatally burned through falling into a hole on the side of a burning heap. This accident happened at New Lambton in the county of Durham. The heap in question was supposed by the residents to be burnt out and perfectly safe, for they allowed their children to use it as a playground. When the accident happened the deceased, aged one year and nine months, and two other children, aged three and five years respectively, were playing together

when the ground suddenly gave way, leaving a burning hole four feet in diameter, into which the youngest child fell. The child was so much burnt that death occurred two and a half hours after the accident. At the inquest the colliery manager stated that the heap was a deposit of shale about 300 yards square and that there was a very slow combustion going on but he had not known of any gases coming from it during his ten years' experience. There was a pleasant view from the heap and the men were in the habit of going there with their children, though they did so at their own risk. Some 12 years ago a thousand tons of sand were put on the heap with a view of rendering the combustion as low as possible, but this only hindered combustion and did not entirely extinguish it. The colliery company has decided to put a wire fence round the heap and to affix notice boards warning the public of the danger.

*The Local Lessons of the French Mining Disaster.*

The Northumberland miners have decided that the moral for them is the necessity for prevention. They have accordingly passed resolutions suggesting that "salvage corps and approved apparatus be established at every pit and that the Government be called upon to enforce the formation and efficiency of such corps." It is further suggested that in the workings of every pit there should be one or more refuges adequately provided with a store of tinned meats and other provisions, &c.

*Heath Bequest for Newcastle Nurses.*

The trustees of the Heath Bequest (under the will of the late George Yeoman Heath) with the approval of the Charity Commissioners have elaborated a scheme which will materially benefit the nurses of Newcastle. The income from this bequest amounts to almost £200 annually, which the trustees have decided to divide in the following manner. About one-half is to go to the training institutions and the other half to the nurses' homes. Prizes amounting to £52 10*s.*, together with a silver medal, will be awarded annually to the nurses of the Royal Victoria Infirmary. Of this sum £15 in five prizes go to the probationers; £20 in four prizes and a silver medal to the nurses up for their final examination; and £17 10*s.* in three prizes to the sisters. The conditions of the sisters' examination are that one-fifth of the marks shall be allotted for the general administration and discipline of the wards, one-fifth for the capability and application shown by them in the instruction and training of the probationers under their special charge, and the balance of the total marks will be allotted for a competitive examination in medical and surgical nursing, including invalid cookery. Prizes amounting to £10 will be awarded for a competitive examination among the nurses of each of the following institutions: the Children's Hospital, the Lying-in Hospital, the Infectious Diseases Hospital, and the Union Hospital. The trustees also propose to pay one-fourth of the premiums paid by nurses in the different nurses' homes in Newcastle and Gateshead to the Royal National Pension Fund for Nurses not exceeding a sum of £2 to any one nurse in one year.

*The Fees of Colliery Surgeons in Northumberland.*

In my note in THE LANCET of March 17th, p. 794, it was pointed out that the decision of the Northumberland Miners' Association not to abolish the doctors' fees committee required confirmation by the various lodges throughout the county. Contrary, perhaps, to expectation the lodges have now decided by a large majority that the doctors' fees committee is to be abolished, so that the whole question is now taken out of the hands of the Central Union and becomes a purely local one, the men now having the power to deal directly with their medical men. This means that the dispute is practically at an end, though dissatisfaction still lingers in one or two districts, notably Ashington and Walbottle. But those of the miners who try to introduce medical men at the lower rates of remuneration have not an easy task. The medical men who have accepted the positions have often been found wanting and one has recently appeared in the police-court charged with wife desertion! They also complain that there is a tendency on the part of druggists to boycott the medical men who are willing to take the reduced fee. To get over their many difficulties one section of the miners advocates the abolition of the present system and suggests the formation of a "sinking fund"—that is to say, that every man should pay into one common fund, and when the aid of a medical practitioner is required that he should be called in and make his ordinary charge, payment to be made out of the common fund. In connexion with the whole question it is interesting to note that from returns sent in from 53 collieries in Northumberland I learn that the rate of remuneration is as follows: at 41 collieries the payment is 9*d.* per fortnight, at seven 8*d.*, at three 6*d.*, at one 1*s.*, and at another 1*s.* 6*d.*

April 24th.

## WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

*The Conveyance of Milk by Railways.*

AT a meeting of the West of England and South Wales branch of the Incorporated Society of Medical Officers of Health recently held at Cardiff Dr. E. Walford, the medical officer of health of Cardiff, brought forward a question of some importance in connexion with the conveyance of milk by railway companies. It appears that a milk dealer was recently fined by the Cardiff stipendiary magistrate in the sum of £20 as the result of the examination of a sample of milk taken at 3 A.M. from one of the dealer's churns at the railway station, the examination revealing only 2·52 per cent. of milk fat. The defence raised was that the churn when it left the farm on the previous evening contained 18 gallons and that one gallon consisting chiefly of cream which had risen to the top had been abstracted. No evidence in support of this ingenious defence was, however, forthcoming. Dr. Walford dwelt upon the necessity for measures being taken to prevent the tampering with the contents of milk churns during transit. In order to ascertain the views of those engaged in the milk trade he had addressed to some of the largest dairy farmers in Somersetshire and Gloucestershire the following questions:—1. Do you consider that the present methods which are generally adopted by the railway companies for conveying milk in railway vans afford adequate protection from fraud of the milk? 2. Can you suggest any improvement in the methods adopted? 3. Do you approve of sealed or locked churns? 4. If not, what are your objections to such churns? 5. What form of churn do you consider most suitable? Two of the 12 farmers who replied to these inquiries were quite satisfied with the present methods. All the others complained that milk is frequently conveyed in guards' vans with all sorts of other goods such as fish and vegetables and sometimes even with dogs or calves. They were greatly in favour of special milk vans, properly ventilated and kept at a suitable temperature. They were nearly all in favour of locked churns. It is of interest to learn that nearly seven years ago the Railway Companies Association, in reply to an inquiry, informed the Board of Trade that "senders have for a long time been allowed to send milk in sealed cans; the companies accept the declaration of the senders as to the quantity conveyed, no extra charge being made, the only condition being that the tare weight of the cans shall be stamped upon the outside of the cans, so that in case of doubt the quantity of milk within the churn can be approximately ascertained by allowing 10½ pounds for each gallon on milk declared." Dr. Walford emphasised the importance of keeping the milk under supervision from the time it leaves the cow until it reaches the milk depôt, fresh and clean unsterilised milk being in his opinion a more suitable food for infants than sterilised milk. Milk drawn from the udder with strict aseptic precautions, if not sterile, is at least, he maintained, comparatively free from bacteria, and if strained and cooled to 40° F. and kept at this temperature during transit the multiplication of bacteria is sufficiently arrested for all practical purposes. In the course of the discussion Dr. Francis T. Bond expressed the opinion that there would be little or no improvement in the methods of production and distribution of milk unless the milk consumers brought pressure to bear upon the purveyors who in their turn would have to compel the middleman and the dairy farmer to conform to the present-day ideals of cleanliness.

*The Qualifications of Inspectors of Nuisances.*

The Local Government Board has been recently making more detailed inquiries than was formerly the case into the qualifications for the duties of the office of newly appointed inspectors of nuisances. One of the latest instances is in connexion with the appointment of such an official for the

rural district of Leominster in Herefordshire. The inspector who had been in office about 20 years having resigned, the district council advertised for a successor and more than 100 persons responded, although the salary offered was only £70 per annum, with no allowance towards the expenses entailed in getting about the district. Among those who applied for the post were several men who held a certificate of competency from the Royal Sanitary Institute or who were otherwise specially qualified. The district council did not elect one of these and upon applying to the Local Government Board to sanction the appointment of another candidate it received a communication from the Board asking for the special reasons which led the council to make this particular selection as the person chosen appeared to have no previous experience of the duties of the office of inspector of nuisances. In the course of its reply to the Board the district council stated that its nominee proposed to enter for an examination for inspectors of nuisances during the next few months, whereupon the Board intimated that for the present its sanction to the appointment would be withheld but would be given in the event of a proper certificate of proficiency being obtained within a year. The Board is to be congratulated upon the firm stand it has taken which is so entirely in the interests of the public health.

*The Aberystwyth Board of Guardians and its Medical Officer.*

The Aberystwyth guardians were informed at their meeting on April 16th that the assistance rendered by the infirmary house surgeon would be withdrawn at the end of April. Mr. W. Thomas, the ex-mayor, said that he was satisfied that they had done the right thing and he now proposed that a copy of the letter should be sent to the Local Government Board with an intimation that the guardians had no medical officer in view and threw the responsibility for the entire care of the sick inmates on to the shoulders of the Local Government Board. This was seconded by Mr. E. Morris and on being put to the vote was carried.

*The Bridgwater Rural District Council and its Medical Officer of Health.*

The Bridgwater rural district council recently decided to reduce the salary of its medical officer of health from £70 to £60 per annum. The Local Government Board, however, does not approve of this proceeding, and at a meeting of the rural council held on April 11th a letter was read from the Board advising the council to reconsider its decision and contending that the reasons for the proposed reduction were insufficient. It was proposed that the original salary should be paid and this was seconded, but eventually an amendment was carried by 8 votes to 5 to the effect that the Local Government Board should be informed that the council, after having fully considered the matter, is of opinion that it is fully justified in making the reduction.

April 24th.

## SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

*Motor Ambulance for Glasgow.*

BY next month the St. Andrew's Ambulance Association will have on the road a new and specially equipped motor ambulance. This vehicle, it is expected, will extend the sphere of the society's usefulness in the Glasgow district and its work will be of interest far beyond the city, being one of the first of its kind in use in the United Kingdom. The motor ambulance when complete will have accommodation for two accident cases in ordinary circumstances but it is to be so constructed that it will accommodate more than double that number in an emergency. It will be lighted by electric light, and a red cross lamp will light its path at night and a glass transparency indicate during the day the mission which it fulfils. With the motor ambulance it will be possible to attend accidents on the fringe of the wide Glasgow district and to insure a much more speedy journey for the unfortunate injured to the various infirmaries.

*The "Alice Mary Corbett" Memorial Nurses' Home.*

This home, given by Mrs. Polson to the Glasgow Samaritan Hospital for Women in memory of her daughter, the late Mrs. Cameron Corbett, was opened recently and formally handed over to the governors of the hospital. This new addition to the hospital consists of three storeys and accommodation is provided for 28 nurses, each nurse having a separate apartment, while a suite of rooms is reserved for the matron. A large drawing-room for the nurses is situated on the ground floor. The building, which with the site has cost £10,000, has also been furnished at the donor's expense.

*Relief of Incurables.*

Under the management of the Glasgow and West of Scotland Association for the Relief of Incurables there are two homes—the Lanfine Home for patients suffering from pulmonary tuberculosis and not considered suitable cases for admission to a sanatorium, and the Broomhill Home, into which patients suffering from other ailments are admitted. The medical officer's report for the past year shows that in the Broomhill Home at the end of December, 1904, there were 108 patients under treatment, as compared with 117 in 1905; while in the Lanfine Home there were ten patients, as against 13 at the end of 1905. One point which is very satisfactory is that in the Lanfine Home, although intended for those cases not considered suitable for sanatoriums owing to the advanced stage of the disease, one patient was dismissed as cured during the year, while five left the home considerably benefited. The advantage of such a home for advanced cases of pulmonary tuberculosis is very evident both to the patients themselves and also to those who as inmates of dwellings from which the patients have been removed are extremely liable to be infected with the disease. It is to be noted with regret that for the year there is a debit balance of £1465 and on this account the directors will be unable for the present to carry out any further extensions and thus during the next year there can be no more admissions to the Broomhill Home except owing to the death or removal of inmates.

*Small-pox among Alien Emigrants.*

In a report to the Glasgow town council Dr. A. K. Chalmers, medical officer of health of Glasgow, draws attention to some grave defects in the housing and inspection of alien emigrants detained in Glasgow for a longer or shorter period while waiting for the steamer to convey them to America. A case in point is that of a Russian Jew who was admitted to hospital on March 26th suffering from small-pox. He arrived from Russia *viâ* Rotterdam and Grangemouth on March 22nd and with four others was accommodated in one of the hotels of the city. On the evening of admission he visited the shop of a fellow countryman who, observing an eruption on his face, took him to another hotel which is also used by emigrants and at once communicated with the medical officer of the shipping company concerned. In this latter hotel the patient was detained in a room by himself but in the previous hotel he occupied two rooms in succession and had opportunities for mixing with between 400 and 500 people who were accommodated in the hotel. The Aliens Act, 1905, holds the shipping companies responsible for the completion of transit of such persons as they have introduced into this country, but while in Glasgow, as this case illustrates, infection from a small-pox patient may reach a considerable section of the resident population before its presence is recognised. It would therefore seem desirable that so long as this traffic continues these emigrants should be housed by themselves and regularly inspected so that the public may have a reasonable degree of protection against imported disease. It is worthy of note also that there is no daily medical inspection of emigrants, although the interpreters employed are expected to intimate at once any case of sickness coming under their notice.

*Commemoration Day at the University of Glasgow.*

On April 18th the University of Glasgow was *en fête* to celebrate Commemoration Day. An elaborate programme was carried through, the most interesting item being an oration by Professor Henry Jones on Francis Hutcheson, who was professor of moral philosophy in the University from 1730 to 1746. At the conclusion of the address honorary degrees were conferred on several distinguished individuals.

April 24th.

## IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

*Royal University of Ireland.*

A MEETING of Convocation of the Royal University of Ireland was held in the University Buildings on April 20th, Mr. Edward Cuming, M.A., barrister-at-law, presiding. After other business had been transacted Dr. J. C. McWalter, M.A., proposed a motion that lady graduates should be entitled

to become members of Convocation. The Rev. Mr. Leslie said that he quite agreed with the motion and would support it provided that the Senate endeavoured to obtain powers to maintain order amongst the male graduates. He moved the following amendment:—

Provided that the Senate seeks such alteration in the Charter as will give it sufficient power to maintain order and discipline in this University.

The Rev. Mr. Pillor seconded the amendment. The amendment was not, however, pressed and the original motion was carried. With reference to the disorders which had taken place the chairman said that he regretted and condemned as much as anyone the proceedings which took place at the conferring of degrees in October last. He considered that they were offensive and objectionable but as a member of the Senate for many years he was strongly of opinion that it was not for the benefit of harmony in the University or of university education that they should hold a discussion on this matter six months after it took place. He thought that a very exaggerated importance had been given to the matter and to those who took part in it. Subsequently, Dr. John Campbell of Belfast was elected a member of the Senate in place of his honour Judge Shaw, K.C., resigned. The following was the result of the voting: Dr. J. Campbell, 298 votes; Dr. E. Magennis, 106; and Mr. Perry, C.E., 61. There was one spoiled vote. Dr. Campbell is the President of the Royal University Graduates' Association. His election will strengthen the medical side in the Senate.

*Tughan v. Darnell.*

It was announced last week that the notice of appeal against the verdict in this celebrated case has been withdrawn, which leaves the result as a verdict for the plaintiff. The case, it will be recollected, was brought against a medical man for alleged negligence. At the first trial the jury disagreed, at the second they found for the defendant, and at the third for the plaintiff. Two special points of great interest to the medical profession came up in this trial. The judge (the Lord Chief Baron Palles) decided that the ordinary custom or practice followed by the medical profession could not be regarded as evidence or of value unless tested by the jury in its bearing upon the particular case at issue. The other question was the definition of negligence. Previously judges had laid down the rule that negligence meant want of skill, but that in medical matters, owing to the nature of the science, the same exactness could not be expected which would be demanded in the case of an engineer who is controlled by distinct limitations recognised by everyone. The Chief Baron, in the Darnell case, quoted a definition (he did not give the name of its author) of negligence which will, if it is now to be the accepted one, make medical practice very difficult. Negligence on the part of the medical man, he said, was want of consummate skill, care, and foresight. One can understand a medical man being expected to have care and skill. If this care and skill are to be "consummate" it is bad enough, but if in addition he is to show consummate foresight I am afraid legal actions against members of the medical profession will increase tenfold. Imagine lawyers being compelled to live up to such a test.

*Mater Infirmorum Hospital, Belfast.*

From the twenty-second annual report of this hospital it appears that during the past year there were 1525 interne patients, 3762 accidents, and 22,597 out-patient cases. 389 surgical operations were performed. The total number of patients who received treatment was 27,884, being an increase of 1517 as compared with the year 1904. The most notable increase is in the number of accident cases. The expenditure was for the past year £5152. The increase of expenditure over income during the past two years leaves a balance due to the bank of £257 19*s.* 9*d.* Additional funds are urgently required.

April 24th.

## PARIS.

(FROM OUR OWN CORRESPONDENT.)

*Consolidation after Dental Grafts.*

THE mechanism of consolidation after dental grafts has been studied experimentally by M. Mendel who recently read a paper on the subject before the Anatomical Society. Microscopic sections show that if an extracted tooth be immediately replaced the alveolo-dental membrane takes on all the work of consolidation and it is impossible to distinguish between the sections of a re-implanted tooth and of a normal tooth. If, however, the grafted tooth be dry—i.e., not freshly extracted—an ossifying process is brought about, callus develops, and the alveolo-dental membrane plays no part.

*Drug Eruptions.*

At a meeting of the Hospitals Medical Society held on March 23rd M. Gaucher, M. Boisseau, and M. Desmoulières communicated a paper dealing with a case of drug eruption alternating with bronchitis in a patient suffering from cystinuria. He was 40 years of age and there was nothing in his history to show that he would be specially susceptible to drugs. Up to the age of 26 years he had taken no medicine except an occasional purgative. About that date, however, he was attacked with abdominal pain and he took three drops of cherry laurel water, equal to seven-tenths of a milligramme of hydrocyanic acid. Twelve hours later he was attacked with a vesicular eruption which spread rapidly all over his trunk and the upper part of the thighs. This rash lasted for some 15 days. On Feb. 8th of this year he suffered from bronchitis and he took one dose of a mixture containing sulphate of sparteine, syrup of narceine, belladonna, and cherry laurel water. During the same night he was attacked with an urticarial eruption which was extremely irritable. On the following day desquamation commenced, which rapidly became generalised and which lasted for four days. While the rash and desquamation lasted he had no cough or any sign of bronchitis. On Feb. 14th the cough returned, so he took another dose of the same mixture with the exception that the cherry laurel water was omitted and chloral was substituted. A few hours later an eruption similar to the last appeared and disappeared at the end of five days. The cough was again arrested and did not return until 10 days later. On March 8th he took a dose of a mixture containing belladonna, narceine, thebaine, and codeine. An eruption followed similiar to the two former and the cough ceased. On March 12th the patient entered the hospital. He had no signs of disease except a generalised desquamation. Two days after the desquamation had ceased and the cough reappeared but was not so violent as formerly. Apparently the eruptions were produced by the cherry laurel water and the belladonna, although it is possible that the opium alkaloids were in fault. The urinary sediment examined under the microscope showed numerous crystals of cystine and analysis showed a marked diminution in the oxidation products of sulphur and nitrogen, but there were present various allied sulphonic derivatives such as characterise abnormal intestinal fermentations.

*Cerebral Tumour; Removal; Recovery.*

At a meeting of the Surgical Society held on April 4th M. Legueu showed a patient on whom he had operated for cerebral tumour. The growth was a glio-sarcoma occupying the lower third of the ascending frontal and parietal convolutions and bridging over the fissure of Rolando. The patient on admission to the hospital suffered from attacks of Jacksonian epilepsy and left hemiplegia. As he had had syphilis and had also sustained an injury to his skull an exact diagnosis before operation was impossible. The growth was easily removed and since the operation the epileptic attacks have ceased and the hemiplegia has completely disappeared. The patient is now quite well, he can walk, and can do a good day's work. M. Legueu said that he would not commit himself to say whether the cranial injury was the consequence of a vertiginous attack, which was the first symptom of an already existing tumour, or whether the cranial injury had in some way or other brought about the growth.

April 23rd.

Mr. William Henry Waterfield, L.R.C.P., L.R.C.S. Irel., has been re-elected vice-chairman of the Stonehouse (Plymouth) board of guardians.

PRESENTATION TO A MEDICAL PRACTITIONER.—At the Public Hall, Liskeard, Cornwall, on April 20th, Mr. George Stephen Meadows, M.B., C.M. Edin., was presented with a silver salver and a pair of silver candlesticks by the members of Bodmin, Liskeard, Looe, Mutley, Saltash, and Torpoint Choral Societies as a mark of their respect and esteem and a slight acknowledgment of the gratuitous musical services which Dr. Meadows had rendered to the societies.

# Obituary.

## GEORGE BUCHANAN, M.D., LL.D. ST. AND., F.F.P.S. GLASG.

ONE of the links connecting the University of Glasgow with a past generation has been severed by the death at Stirling on April 19th of Dr. George Buchanan. Dr. Buchanan occupied the chair of clinical surgery in the University of Glasgow for many years, retiring some time ago on account of declining health. He was the son of Dr. Moses Buchanan who was lecturer on anatomy in the Portland-street School of Medicine, a school which has long since disappeared, and subsequently became professor of anatomy in Anderson's College. Dr. George Buchanan succeeded his father as Professor of Anatomy in Anderson's College and was appointed surgeon to the Glasgow Royal Infirmary. There he was a colleague of Lord Lister and did admirable work before the days of Listerism. It is worthy of note that when chloroform was introduced to the notice of the medical profession he was the first practitioner in Glasgow who volunteered to test the influence of the anæsthetic on himself. In 1874 he was appointed Professor of Clinical Surgery and at the same time became surgeon to the Western Infirmary, a post which he held with much acceptance and distinction until his retirement a few years ago.

Dr. Buchanan was a bold and skilful operator. It was he who first introduced the operation for excising half the tongue and he was also the first to excise the superior maxillary bone for cancer. As a teacher he was a great favourite among the students on account of the clearness and precision of his teaching and also because of his genial personality. By the death of Dr. Buchanan one of that small and fast dwindling group of medical men who served as surgeons in the Crimean war has been lost.

## WILLIAM SCOTT CORE, M.D. R.U.I., L.R.C.S. EDIN.

Dr. W. S. Core, a well-known medical practitioner, died suddenly at his residence, Belfast, on April 21st, after an apoplectic seizure in his bath on that morning; he succumbed in three hours. The deceased, who was 59 years of age, was born in Caledon, being a son of Captain Core of the Tyrone Fusiliers. Studying at Queen's College, Belfast, he graduated M.D. in the old Queen's University and he also became L.R.C.S. Edin. Beginning practice 35 years ago he started in the same district of Belfast in which he resided until his death, and where, by his skill, attention, and kindness to patients, he surrounded himself with a large *clientèle*. For more than 30 years he was medical officer to the Northern Counties Railway (now owned by the Midland Railway Company). Dr. Core was an admirable musician and did much to improve the taste of the public with whom he was brought in contact in this art. He was also a well-known and highly respected member of the Masonic body. Dr. Core leaves a widow, one daughter, and three sons. He was buried in the city cemetery of Belfast on April 23rd, a very large concourse of friends and patients attending to show a last mark of regard.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Alexander Haslund, the well-known professor of dermatology in Copenhagen, aged 62 years.—Dr. V. Vleminckx, president of the Belgian Medical Academy.—Dr. Robert O. Doremus, formerly professor of chemistry and forensic medicine in the Bellevue Hospital Medical College, New York.

MEDICAL MAGISTRATE.—The name of Dr. Frank Russell of Heaton, Newcastle-upon-Tyne, has just been added to the commission of the peace for the city and county of Newcastle-upon-Tyne.

# Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations held in April the following candidates passed in the subjects indicated:—

*Surgery.*—T. P. Braim, Leeds; L. C. W. Brigstocke (Section I.), St. George's Hospital; D. L. E. Gay (Section I.), Lausanne; J. H. Harrison (Section II.), Sheffield; C. L. Senn (Sections I. and II.), Geneva; E. F. Thomas (Section I.), Middlesex Hospital; and P. C. W. Laws, Oxford and St. George's Hospital.

*Medicine.*—J. W. Blooker (Sections I. and II.), Amsterdam; H. A. Fenton (Section I.), St. Mary's Hospital; D. L. E. Gay (Section I.), Lausanne; O. P. N. Pearn (Section I.), Westminster Hospital; C. L. Senn (Sections I. and II.), Geneva; H. Smith (Sections I. and II., Sheffield; E. F. Thomas (Section I.), Middlesex Hospital; and A. P. Wright (Sections I. and II.), Glasgow and Liverpool.

*Forensic Medicine.*—J. W. Blooker, Amsterdam; H. A. Fenton, St. Mary's Hospital; D. L. E. Gay, Lausanne; C. L. Senn, Geneva; H. Smith, Sheffield; and E. F. Thomas, Middlesex Hospital.

*Midwifery.*—R. Beesley, Manchester; D. L. E. Gay, Lausanne; C. L. Senn, Geneva; and E. F. Thomas, Middlesex Hospital.

The diploma of the Society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery: T. P. Braim, J. H. Harrison, P. C. W. Laws, C. L. Senn, and A. P. Wright.

UNIVERSITY OF CAMBRIDGE.—Mr. Stanley Boyd and Mr. L. A. Dunn have been appointed Examiners in Surgery and Dr. H. Morley Fletcher an Examiner in Medicine for the M.B degree.—The following candidates have passed the Sanitary Science Examination and are entitled to the University Diploma in Public Health:—

K. V. Amin, H. E. Arbuckle, J. C. Bridge, T. Carnwith, J. T. Clarke, C. V. Craster, C. Fraser, A. E. Hodgson, E. C. G. Maddock, J. A. Mitchell, J. M. Morris, E. L. Perry, W. Thorp, and W. J. Wilson.

—Mr. W. Bateson, F.R.S., St. John's, has been appointed deputy for the Professor of Zoology and Comparative Anatomy during the ensuing academic year.

UNIVERSITY OF DURHAM.—At the Second Examination for the degree of Bachelor in Medicine held recently the following candidates satisfied the examiners:—

*Anatomy, Physiology, and Materia Medica.—Second-class honours:* Eldred Curwen Braithwaite, College of Medicine, Newcastle-upon-Tyne. *Pass list:* Harriett Amelia Rachel Apps, London School of Medicine for Women; Charles Ernest Lewis Burman, and Leslie Wilson Evans, College of Medicine, Newcastle-upon-Tyne; Charles Westland Greene, Royal College of Surgeons, Ireland, and College of Medicine, Newcastle-upon-Tyne; Arthur Charles Greene, College of Medicine, Newcastle-upon-Tyne; Claude Percival Rivers Harvey, London Hospital, and College of Medicine, Newcastle-upon-Tyne; Edmund Hudson, M.R.C.S., L.R.C.P., St. Thomas's Hospital; and Annie Viccars Mack, Herbert Richard McAleenan, Stanley Larmond Randolph, Joseph Albert Sacco, Rev. Robert Henry Smallwood, M.A., and Theodore William Stallybrass, College of Medicine, Newcastle-upon-Tyne.

UNIVERSITY OF OXFORD.—J. Sholto C. Douglas, B.M., B.Ch., Christ Church, has been elected to a Radcliffe Travelling Fellowship.—The degree days appointed for the present term are as follows: Thursday, April 26th; Thursday, May 17th; Saturday, June 2nd; Thursday, June 14th; Thursday, June 21st; and Saturday, July 7th.—Examinations for scholarships in natural science will be held at Merton College, New College, and Corpus Christi College, commencing on April 24th, and at Brasenose College, commencing on June 26th.—There will be an election to a Fellowship at Merton College on Saturday, Oct. 6th, after an examination in the subjects recognised in the Honour School of Chemistry.—The examinations for the degrees of B.M., B.Ch., will commence on Thursday, June 14th. Names must be sent in to the secretary to the Boards of Faculties not later than 10.30 A.M. on Tuesday, May 29th.—The examination for the degree of Master in Surgery will commence on Thursday, June 21st. Names must be sent in to the secretary to the Boards of Faculties not later than 10.30 A.M. on Friday, June 1st.

AN HISTORICAL MEDICAL EXHIBITION.—The exhibition of rare and curious objects relating to medicine, chemistry, pharmacy, and the allied sciences which is being organised by Mr. Henry S. Wellcome of the firm of Burroughs, Wellcome, and Co. will, as that gentleman announces in a preliminary programme, be opened shortly. It will be strictly professional and scientific in character and will not be open to the general public. The advance programme, which may be obtained on application to Mr. Wellcome, Snowhill Buildings, London, E.C., contains several curious and interesting illustrations taken from old manuscripts,

while the cover of the programme is embellished on the front page with a coloured reproduction from an incised stone carving of I-em-hotep. In an introductory letter setting forth the objects of the exhibition, the organiser says, "It is my aim to bring together a collection of historical objects illustrating the development of the science and art of healing throughout the ages, ..... in particular to trace the origin of the use of certain remedial agents. Why were certain substances used in the treatment of di-ease? Was their adoption the result of study and practical observation, or was it more usually the result of accident? Were the alleged virtues purely imaginary and due to some superstitious suggestion? ..... I anticipate that the exhibition will reveal many facts, and will elucidate many obscure points in connexion with the origins of various medicines and in respect to the history of diseases. ..... I shall greatly value any information sent me in regard to medical lore, early traditions, or references to ancient medical treatment in manuscripts, printed works, &c. Even though the items be small, they may form important links in the chain of historical evidence. ..... The greatest care will be taken of every object lent. All exhibits will be insured, and ..... packing and carriage both ways will be paid."

THE CHEMISTS' EXHIBITION.—The twelfth annual chemists' exhibition organised by the proprietors of the *British and Colonial Druggist* was opened at the Royal Horticultural Hall in Vincent-square, Westminster, on Monday last and remained open until Friday, the 27th inst. The occasion is evidently one appreciated alike by wholesale and retail druggists and has primarily for its object the extension of business opportunities. The number of visitors was very satisfactory and many pharmacists from all parts of the country attended. The exhibition is not without interest to medical men, inasmuch as the subjects of exhibition included medical and surgical appliances, drugs, special foods, and so forth. The exhibition affords also some interesting sidelights on the pushful ways adopted by the modern druggist to sell his wares. We cannot help remarking that many of the exhibits had a strong flavour of quackery about them, as, for example, "The famous galvanic ring worn throughout the world for rheumatism, neuralgia, insomnia, and kindred ailments—the most profitable and quickest selling side line for chemists." Such an exhibit, we should have thought, would prove offensive to respectable pharmaceutical houses. Some of the stalls, though somewhat crowded together, were splendidly designed and made very attractive, a considerable sum of money evidently having been spent upon them. More in evidence, perhaps, than other wares were sponges, soaps, and perfumery, and a great number of proprietary articles, all of which now go to make up the counter sales of the modern druggist and pharmacist.

LONGEVITY.—Mr. F. Whitfield of Newport, Monmouthshire, celebrated the 101st anniversary of his birthday on April 6th.

# Parliamentary Intelligence.

## HOUSE OF COMMONS.

WEDNESDAY, APRIL 25TH.

*Compulsory Vaccination.*

IN the House of Commons on Wednesday, April 25th, Mr. LUPTON called attention to the question of vaccination and moved: "That in the opinion of this House vaccination ought no longer to be obligatory on those who regard it as useless or dangerous."

Mr. J. M. ROBERTSON, who seconded the motion, declared that the law of exemption had been frustrated in all directions and in many cases grossly overridden. Applications for exemption had been often met by the most arrogant and insolent refusal because the magistrate avowed that he was not satisfied that the objector properly understood the subject. Some people had been inclined to think that the administration of the law would be considerably improved by sending a few magistrates to prison. He claimed that it was only by statistical proof that they could establish the value of vaccination and that he could judge of the results as well as a doctor or a magistrate. The Jenner Society existed in order to do justice to the reputation of Jenner, but the action of that society was a scientific imposture. The practice introduced by Jenner was no longer a part of the practice or theory of vaccination. Jenner's ground was abandoned nearly half a century ago. He was the means of establishing a penal law on a theory which had been repudiated and was no longer held by the representatives of vaccination. The vaccination of to-day was Pasteurian. That had nothing whatever to do with Jenner and the medical profession in this matter was seeking to gloss over and hide the fact that it had three times changed its ground and all the while been asking for compulsory powers from Parliament to apply a law which by its own confession had been wrong. They wanted to know when the profession began to be right. Instead of admitting that it had compulsion without just grounds it proceeded to bring forward new theories and they had now the theory that vaccination was useless without revaccination which was a negation of the ground on which vaccination stood for 60 years. The history of the profession in this matter was a history of error tardily acknowledged and glossed over where possible. 60 years ago the profession gave to the world a declaration signed by 500 men to the effect that vaccination could not convey certain grave specific diseases. That was an error. The medical profession had been always finding out that it was in error. They would never have the medical truth on this matter until vaccination was no longer endowed by the State. The resolution, he contended, was moderate and just in its terms. If it were not for the antivaccinators, in regard to whom the *British Medical Journal* adopted such a contemptuous and insolent tone, there would be little known about vaccination. He ventured to say that not one doctor in ten had read Cruickshank on vaccination. The ignorant prejudice was not on the side of the anti-vaccinators but to a large extent on the side of the pro-vaccinators, who stood to a dogma which they had learned at College but who had not gone into the grounds on which that dogma could be justified. According to the statistics hundreds upon hundreds of children had been killed by vaccination and if this had been foreseen Parliament would not have agreed to compulsion. Vaccination was either a prophylactic or it was not. If it were a prophylactic a man might defend himself and his family against small-pox as far as he could. If it were not a true prophylactic it was an iniquity. The medical profession could no longer deny that hundreds had been killed and many seriously injured by it. Coercion in the matter was monstrous and he asked the House to pass the resolution, trusting that it would elicit from the Government the legislation that was needed.

Mr. PICKERSGILL having supported the motion,

The PRESIDENT OF THE LOCAL GOVERNMENT BOARD (Mr. BURNS) said he had not had a great deal of time to consider and decide the many points raised in the discussion. It had been pointed out that there was differential treatment of those who wished exemption and it was pointed out—he was afraid with some truth—that differentiation was made between the rich and the poor, between the educated and uneducated, and between those with a smattering of medical knowledge and those who were innocent of the terminology of the profession. He might remind the House that the Act of 1898 was not absolutely compulsory as it allowed conscientious objectors to be exempted under certain conditions. The supreme difficulty was mainly administrative. Injustice was due to lack of uniformity in administration and the capricious decisions of magistrates who sometimes behaved on the bench in this matter in a manner that was not creditable. He trusted that magistrates would cease to display differential treatment. With regard to the cost of vaccination, it had become more serious as the years went on. In 1899 the cost was £72,000; in 1900, £237,000; and now, £270,000. He believed the way in which the Act was administered provoked a spirit of resistance to vaccination where otherwise it would not exist. He was considering the whole subject in the light of certain reforms which he thought were desirable and inevitable. The question of cost was sufficient to warrant departmental attention at once. He was bending his mind to the amendment of the existing procedure in securing certificates of exemption. The Local Government Board considered that some reform in the direction of a statutory declaration being made by either parent at less cost than now would be necessary if the Act were to secure the harmonious coöperation of all sections of the community. He attached a great deal of importance to the temporary suspension of vaccination from early infancy to some sensible later period when the consequences to the individual would be greatly minimised. Further, the Local Government Board would institute an inquiry, for which a committee of the House would not be necessary, into the working of the Act. It thought that uniformity of practice was urgently desirable. He hoped, in view of his statement, that the motion would be withdrawn.

Mr. EUGENE WASON trusted that the Government would consider the claims of Scotland, which at present did not enjoy the liberty English people possessed of declaring a conscientious objection.

Sir W. J. COLLINS said that the Royal Commission of which he was a member was virtually unanimous on the point that the honest objector should not be subject to any penalty. If the Bill of 1898 had carried out the intentions of the Commission the House would not now be discussing this resolution. He could not endorse all that had been said of the profession to which he belonged but no professional man who had a reputation to lose would be prepared to maintain the position as regards the preventive power of vaccination or its innocence as regards injurious results which was originally proclaimed by Dr. Jenner when he petitioned this House. He was in favour of the abolition of compulsion. He believed it would redound to the honour of the profession if they were free from association with the policeman and the bailiff and they would have greater confidence and respect from the public.

The motion was by leave of the House withdrawn.

# Appointments.

*Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to* THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ABBOTT, HENRY KINGSMILL, M.D. Dub., D.P.H. Irel., has been appointed Medical Superintendent of the Hants County Asylum, Fareham.

BELL, T., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Uppingham District of the county of Rutland.

BERGIN, W. M., M.B., B.S. Lond., has been appointed Ophthalmic Assistant, Registrar, and Tutor at Guy's Hospital.

BIRD, GEORGE WILLIAM HARVEY, M.B., B.C. Cantab., has been appointed Medical Officer of Health to the Bridgwater (Somerset) Port Sanitary Authority.

GARDINER, PETER, M.D., C.M. Glasg., D.P.H. Lond., has been appointed Medical Officer for the Camborne District by the Redruth (Cornwall) Board of Guardians.

HORGAN, J., L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Kenmare District of the county of Kerry.

JOHNSTONE, JOHN LLOYD, M.R.C.S., L.R.C.P., has been appointed Clinical Assistant to St. John's Hospital for Diseases of the Skin, Leicester-square.

KERRAWALLA, M. P., M.D. Brux., L.R.C.P. & S. Edin., has been appointed Clinical Assistant to the Evelina Hospital for Children.

LANE, J. S., L.R.C.P. & S. Irel., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Crettyard District of Queen's County.

LONGRIDGE, C. J. NEPEAN, M.D. Vict., F.R.C.S. Eng., M.R.C.P. Lond., has been appointed Registrar and Pathologist to Queen Charlotte's Lying-in Hospital, Marylebone-road, N.W.

MAY, WALTER J., L.R.C.P., M.R.C.S., L.D.S., has been appointed Lecturer on Dental Mechanics at the Royal Dental Hospital of London, Leicester-square.

PEARSE, JAMES, M.D., C.M. Edin., has been appointed Medical Officer in charge of Troops at Trowbridge (Wilts).

RICHARDS, P. A. ELLIS, F.I.C., F.C.S., has been appointed Lecturer on Dental Metallurgy at the Royal Dental Hospital of London, Leicester-square.

RICHMOND, JAMES ROBERT MARR, L.S.A., has been appointed Medical Officer of Health of the West Penwith Rural District (Cornwall).

ROLSTON, JOHN R., M.R.C.S. Eng., has been appointed Honorary Ophthalmic Surgeon to the Royal British Female Orphan Asylum, Devonport.

SHEEHAN, M., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Mallow District of the county of Cork.

THOM, GEORGE, M.R.C.S., L.S.A., has been appointed Honorary Consulting Surgeon to the Royal Albert Hospital, Devonport.

TIZARD, HENRY J., L.R.C.P. Lond., M.R.C.S., has been appointed Assistant Medical Officer to the Government Mental Hospitals of New Zealand.

# Vacancies.

*For further information regarding each vacancy reference should be made to the advertisement (see Index).*

BELGRAVE HOSPITAL FOR CHILDREN, Clapham-road, S.W.—Senior and Junior Resident Medical Officers for six months. Honorariums at rate of £20 and £10 a year respectively, with board and lodging.

BIRKENHEAD BOROUGH HOSPITAL.—Junior Resident House Surgeon. Salary £80, with fees.

BODMIN, CORNWALL COUNTY ASYLUM.—Third Assistant Medical Officer, unmarried. Salary £135 per annum, with board, apartments, washing, &c.

BURLEY-IN-WHARFEDALE, SCALEBOR PARK (PRIVATE ASYLUM).—Assistant Medical Officer, unmarried. Salary £150 per annum, with board, apartments, attendance, &c.

CAMBRIDGE, UNIVERSITY OF CAMBRIDGE PATHOLOGICAL LABORATORY.—John Lucas Walker Studentship. Annual value £200, tenable, under certain conditions, for three years.

CANTERBURY, KENT AND CANTERBURY HOSPITAL.—House Physician, unmarried. Salary £90 a year, with board and lodging.

CHARING CROSS HOSPITAL.—Assistant Physician.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—Resident Medical Officer. Salary £100 per annum, with board, &c. Also Physician to Out-patients. Also Surgeon Dentist.

COLCHESTER, ESSEX AND COLCHESTER GENERAL HOSPITAL.—House Surgeon. Salary £100 per annum, with board, washing, and residence.

COVENTRY AND WARWICKSHIRE HOSPITAL.—Junior House Surgeon for six months, renewable. Salary £60 per annum, with rooms, board, washing, and attendance.

DEVONPORT, ROYAL ALBERT HOSPITAL.—Resident Medical Officer, unmarried. Salary £100 per annum, with board and lodgings.

DOUGLAS, ISLE OF MAN, NOBLE'S ISLE OF MAN HOSPITAL AND DISPENSARY.—Resident House Surgeon, unmarried. Salary £90 a year, with board and washing.

EAST SUFFOLK AND IPSWICH HOSPITAL.—Third House Surgeon. Salary £50.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, S.E.—Surgeon.

FAREHAM, HANTS COUNTY ASYLUM.—Second Assistant Medical Officer, unmarried. Salary £175 per annum, with apartments, board, washing, and attendance.

GOSFORTH, NEWCASTLE-ON-TYNE CITY ASYLUM.—Assistant Medical Officer, unmarried. Salary £140 a year, rising to £160, with apartments, board, and laundry.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.—House Surgeon, unmarried, for six months. Salary £20, with board and residence.

HULL ROYAL INFIRMARY.—House Physician, unmarried. Salary 30 guineas per annum, with board and apartments.

ITALIAN HOSPITAL, Queen's square, London, W.C.—Honorary Assistant Physician.

KENSINGTON GENERAL HOSPITAL, late "QUEEN'S JUBILEE," Earl's Court, London, S.W.—Assistant Dental Surgeon, Medical Registrar, Gynæcological Registrar (all honorary).

LEICESTER INFIRMARY.—Assistant Surgeon.

METROPOLITAN ASYLUMS BOARD FEVER AND SMALL-POX HOSPITALS.—Assistant Medical Officers. Salary £180 per annum, rising to £240, with board, lodging, attendance, and washing.

METROPOLITAN ASYLUMS BOARD, Downs School, Sutton, Surrey (for Children with Ringworm).—Assistant Medical Officer. Salary £250 per annum and dinner.

MILLER HOSPITAL AND ROYAL KENT DISPENSARY, Greenwich-road, S.E.—Junior Resident Medical Officer. Salary £80 per annum, with board, attendance, and washing.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Hampstead.—Resident Medical Officer. Honorarium £50 per annum, with board, lodging, &c.

NEWPORT AND MONMOUTHSHIRE HOSPITAL.—Junior Resident Medical Officer. Salary £70 per annum, with board, residence, and washing.

OLDHAM INFIRMARY.—Junior House Surgeon. Salary £75 per annum, with board, residence, and laundry.

OXFORD, LITTLEMORE PAUPER LUNATIC ASYLUM.—Second Assistant Medical Officer, unmarried. Salary £120, rising to £150, with rooms and board.

PLYMOUTH, SOUTH DEVON AND EAST CORNWALL HOSPITAL.—Assistant House Surgeon for six months, renewable. Salary at rate of £50 per annum, with board, residence, and washing.

ROYAL DENTAL HOSPITAL OF LONDON, Leicester-square.—Assistant Dental Surgeon.

SHEFFIELD ROYAL HOSPITAL.—Honorary Assistant Surgeon. Also Two Honorary Assistant Physicians.

SHEFFIELD UNION HOSPITAL.—Resident Medical Officer. Salary £100 per annum, with apartments, rations, and allowances. Also Resident Assistant Medical Officer. Salary £80 per annum, with apartments, rations, and allowances.

SOCIETY OF APOTHECARIES OF LONDON.—Examiner in Midwifery.

SWANSEA GENERAL AND EYE HOSPITAL.—House Surgeon. Salary at rate of £50 per annum first six months, £75 per annum after, with board, apartments, washing, and attendance.

VICTORIA HOSPITAL FOR CHILDREN, Tite-street, Chelsea, S.W.—Honorary Anæsthetist.

WARRINGTON INFIRMARY AND DISPENSARY.—Junior House Surgeon, unmarried. Salary £100 per annum, with residence and board.

WEST BROMWICH DISTRICT HOSPITAL.—Resident Assistant House Surgeon, unmarried. Salary £50 per annum, with board, residence, and washing.

WEST LONDON HOSPITAL, Hammersmith-road, W.—Assistant Anæsthetist. Also Second Assistant Anæsthetist. Also Casualty Surgeon.

WESTERN GENERAL DISPENSARY, Marylebone-road, N.W.—Honorary Surgeon.

# Births, Marriages, and Deaths.

## BIRTHS.

CURTIS.—On April 20th, at Lynde's, Redhill, the wife of Frederick Curtis, F.R.C.S. Eng., of a daughter.

GABB.—On April 17th, at Cornwallis-gardens, Hastings, the wife of Harry Secretan Gabb, B.A., M.B., B.C., prematurely, of a daughter (stillborn).

GATES.—On 21st April, at Via Palestro A., Florence, Italy, the wife of Edward A. Gates, M.D., M.R.C.P., of a son.

## MARRIAGES.

DAY—WILLIAMS.—On the 21st inst., at St. George's, Stonehouse, Plymouth, by the Rev. J. Gaud, assisted by the Rev. Nicholson Watson, vicar of St. George's, and the Rev. Walter Moyle, vicar of Ashcombe, Dawlish, William Frank Lydstone Day, M.B., B.C. Cantab., youngest son of the late Robert Newcombe Day of Harlow, Essex, and Dorothy Esther Katherine Williams, younger daughter of F. M. Williams, medical officer of health for Plymouth.

FOX—FOX.—On April 19th, at All Saints' Church, Holbeton, Edward Hamilton Bruce Fox, M.R.C.S., L.R.C.P., of Woolston Lodge, Southampton, to Maude Geraldine, second daughter of Charles Alfred Fox, of Battisborough House, Holbeton.

MACARTHUR—SOMMERVILLE.—On April 17th, at St. Mary's Episcopal Church, Port-Glasgow, William Forrest Macarthur, M.B., C.M., to Margaret, daughter of R. G. Sommerville, J.P., Aldergrove, Port-Glasgow.

PENDRED—MATTHEW.—On April 23rd, at St. Barnabas, Addison-road, Kensington, by the Rev. J. Grant, M.A., assisted by the Rev. T. Guy Rogers, B.D., Vaughan Pendred, M.D., F.R.C.S. Eng., of Coventry, eldest son of Vaughan Pendred, M.I.M.E., and Mrs. Pendred, of Crabill, Pendennis-road, Streatham, to Beatrice Elizabeth, daughter of Dr. and Mrs. Mordaunt Matthew, of 22, Holland-road, Kensington, W.

PRIDMORE—PAUL.—On April 18th, at Christ Church, Westminster, Eric Leonard Norman Pridmore, M.D., to Sophie Emily Marie Pauline Paul, daughter of the late Bernhard Ralph Paul of Shortlands, Kent.

SHUTER—SAUNDBY.—On April 25th, at Edgbaston Parish Church, by the Rev. Canon Foakes Jackson, D.D., Dean of Jesus College, Cambridge, assisted by the Rev. A. Roberton, Alfred Dever Shuter, M.A. Cantab., second son of William Shuter, 22, Belsizegrove, Hampstead, to Marjorie Spencer, daughter of Robert Saundby, M.D., J.P., Professor of Medicine in the University of Birmingham.

## DEATHS.

BUCHANAN.—At Balanton, Stirling, on the 19th inst., George Buchanan, M.A., M.D., LL.D., aged 79, Emeritus Professor of Clinical Surgery, Glasgow University.

HUTTON.—On the 24th inst., at Lulworth House, Birkdale, Lancashire, the residence of her son, Dr. D. M. Hutton, Eliza Peddie, widow of David Hutton, Esq., of Parkfield-road, Liverpool, and youngest daughter of the Rev. Peter Steele, M.A., late of Moray House Training College, Edinburgh, in her 69th year.

SCOTT.—On the 24th inst., at Bury Lodge, New Malden, Surrey, John Scott, F.R.C.S., late of Harley-street, W., aged 95.

SPACKMAN.—On April 21st, in London, Coniston Spackman, M.R.C.S., L.R.C.P., aged 46.

*N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.*

# Notes, Short Comments, and Answers to Correspondents.

## A WARNING.

*To the Editors of* THE LANCET.

SIRS,—I am reluctant to trespass upon your space but I shall be very glad if you will permit me to give my brother practitioners a word of warning through your columns; it may save them from being victimised as I have been. There is a certain practitioner at present doing locum work who has caused me annoyance and injury to an extent that is hardly credible. From what I hear he has treated other medical men in a similar manner and I wish to put my fellow practitioners on their guard against a man whom it is dangerous to employ. The person in question is an Eurasian (I make no complaint here against either Eurasians or Indians as a class) and can be identified by his extraordinary flow of eloquence upon the subjects of his own abilities and experiences. I confess I was not entirely free from suspicion as to his character when I engaged him at rather short notice to do a few weeks' locum work. Neither his appearance nor manner inspired confidence. I believe now that he wished to give me such a bad impression of him that I would be inclined to pay him a sum down to be released from the arrangement. I sincerely wish now that I had made the sacrifice. After I had left home he tried to give my family the impression that he was a dangerous man to cross. He boasted of having made himself so obnoxious to two former employers that they had severally offered him £100 to leave their neighbourhood. This I can readily believe. He also declared it was his habit to revenge himself upon any who had injured him in a manner quite Eastern in its completeness. On my return from the country I found a very unsatisfactory state of affairs. I discharged the man for insulting young girls, for neglect of duty, and for making libellous statements to the patients about myself. The man's conduct is hard to understand except on the hypothesis of mental trouble, for I had done nothing either by word or deed to arouse his hostility. He had no sooner left my house than he began a system of malicious persecution. He went round among my patients repeating his libellous statements and in some instances telling those who owed bills that they need not pay them, as the fees were not legally recoverable. This in one case necessitated my suing the debtor in the county court. As for the charges he made against me, they were so obviously untrue that I am glad to say very few of my patients gave them any credence. Not content with the revenge he had taken he called upon my dispenser and tried to get his assistance in opposing me and upon the dispenser's refusal he made use of threats. I discovered that during my absence he had called in a friend of his to pose as a consultant. He obtained a fee of £3 3*s.* for his friend and handed over the case to him entirely, of course to my detriment. No doubt the medical friend kindly acts as a reference in return for such favours. All I have stated is capable of legal proof. If any other medical practitioners who have had a similar experience to mine will kindly communicate with me through the medium of this paper it may be possible to bring the matter to the notice of the General Medical Council. It may be asked why I have not already taken legal proceedings instead of writing this letter. Well, an appeal to the law is expensive and tedious. I have neither the time nor the money to spare for a prosecution; nor have I written this letter for the gratification of revenge. I shall be content if through my action the medical profession is saved from further discredit and the public protected from insult and injury at the hands of a man of criminal tendencies. I inclose my card, and with apologies for the length of this letter,

I remain, Sirs, yours faithfully,

April 23rd, 1906. VICTIM.

*** The agent through whom the locum-tenent was obtained should be communicated with. If only a fraction of what our correspondent says can be proved to the satisfaction of a respectable agent Othello's occupation will be gone.—ED. L.

## THE DURABILITY OF CARDIAC MUSCLE.

Professor **Lortet**, member of the French Academy, has published an interesting report upon the condition of the heart and viscera of King Rameses II. (the Greek Sesostris) after their embalmment for 3164 years. It seems that some months ago the governing body of the Musées Nationaux du Louvre in Paris acquired possession of four beautiful canopic vases covered with blue enamel and bearing the insignia of the ancient Egyptian monarch referred to. These were handed over to Professor Lortet for a chemical and microscopical examination of their contents, and Professor Hugouneng, Professor Renaut, and Professor Rigaud were associated with him in the work. Three of the vases were filled with linen bandages, impregnated with soda and glued together with aromatic resinous substances of a red colour. There were also present certain indeterminable granular substances, mixed with pulverised soda, which are conjectured to be all that is left of the stomach, the liver, and the intestines of the great king. The heart was found in the fourth vase, which is ornamented on the lid by a jackal. The appearance of the organ is that of an egg-shaped plate about eight centimetres long by four centimetres broad. Its tissue was found to be so solid and horny that in order to separate a portion from it recourse had to be had to the saw. A section was subsequently removed with a razor and submitted to the microscope, when the horny substance was seen to be composed of bundles of muscular fibre, arranged in the cross mesh peculiar to the formation of cardiac and glossal muscle. The tongue of King Rameses II. is, however, undoubtedly present in the royal mummy found in 1881 at Thebes and deposited in the Egyptian Museum at Cairo in 1886, so that there seems to remain no doubt that the organ observed by Professor Lortet is the heart. Rameses II. died 1258 B.C. The 3000 years that have since elapsed and the desiccating effect o soda and aromatic gums have been able to reduce the bulk of the king's heart but not to alter its anatomical formation, while the other viscera have been changed to unrecognisable dust.

## MONSTERS.

*To the Editors of* THE LANCET.

SIRS,—I should be greatly obliged if, through the medium of your correspondence columns, any of your readers could give me information about the literature of fœtal malformation or "monsters."

I am, Sirs, yours faithfully,

April 17th, 1906. X.

## AN UNFORTUNATE CIRCULAR.

A MEDICAL man, who makes no pretence of disinterestedness, writes as follows:—

> The following notice has been sent to every tenant of St. James' Court, Westminster, a block of residential flats in which I and many other medical men have patients residing. Two copies of this notice have been handed to me by patients on whom I am in actual attendance at the moment:—
>
> "The Resident Estate Manager begs to inform the Tenants of St. James' Court that Dr. W. Moyle O'Connor has taken up his residence in No. 43 and 44, Queen's House as Resident Physician to the Court, and that his services are available for the tenants at any time they may be required."

Dr. O'Connor will be well advised to check the resident estate manager's zeal in his behalf. Probably Dr. O'Connor knew nothing of that gentleman's ill-designed efforts, while the resident estate manager may be supposed to be ignorant of the fact that medical men, who are not allowed to advertise themselves, are also not allowed to benefit by the advertisements of others. We sympathise with the resentment of our correspondent.

## IS BARLEY WATER A SUITABLE FOOD FOR INFANTS?

*To the Editors of* THE LANCET.

SIRS,—The letter of "Lacto" in THE LANCET of April 21st, p. 1150, shows very clearly the confusion which arises owing to the use of the terms caseinogen and casein for the chief proteid of milk and his implied protest is certainly wanted. Surely the time has come to abandon the use of the term "caseinogen"; philologically it is barbarous—casein is from the Latin *caseum*, gen is the Greek root γεφ, and where the "o" comes from is a mystery. The root γεφ means to beget and is quite rightly used in hydrogen, oxygen, &c., but in "caseinogen" it has apparently altered its meaning as this substance is not one which begets caseino but which splits up into casein and other products of hydrolysis. Again, "caseinogen" forms salts with bases; are these to be called caseinogenates? and if so, how is the word to be pronounced? The so-called "casein" is really only one of a whole series of compounds produced by the hydrolysis of "caseinogen," and it is only the accidental property of the insolubility of its acid double salt with calcium phosphate that leads it to be produced. Surely, it is better to keep the name "casein" for the parent substance, as is done on the continent, in America, and by a large section of chemists in England. Let us wipe the monstrosity "caseinogen" from the language and avoid the confusion into which all sooner or later are led. I may instance this confusion by referring to a very recent book, Mann's "Chemistry of the Proteids"; in a footnote he states that he has adopted Halliburton's nomenclature; in the text he actually uses the words casein and caseinogen indiscriminately.

I am, Sirs, yours faithfully,

H. DROOP RICHMOND.

Woodfield-road, Ealing, W., April 21st, 1906.

## THE EFFECT OF SUPERAERATED WATER UPON FISH.

UNDER normal conditions fish live in water which contains no more dissolved air than may be absorbed spontaneously at atmospheric pressure and the prevailing temperature. If, however, this amount is greatly exceeded—that is, if the water becomes superaerated, the fish exhibit remarkable symptoms often ending in death. A marked analogy exists between this affection and caisson disease in man. In the latter the body sustains an actual increase of pressure which is subsequently removed and the symptoms follow. This change of pressure has no counterpart in the case of the fish, except that the supersaturation of the water with the atmospheric gases is referable to an increase of pressure. At the station of the United States Bureau of Fisheries at Wood's Hole, Massachusetts, a quantity of sea water became supersaturated with air and the *Scientific American* of March 31st published some details of the effect produced. The absorption of air was due primarily to a leaky suction-pipe which allowed air to pass with the water into storage-tanks where it was subjected to a pressure of about eight pounds per

square inch. From these storage tanks the water flowed to aquaria and being again at atmospheric pressure was in a condition of supersaturation with air. The fish showed a variety of symptoms. There was first a precipitation of very minute bubbles upon their bodies and fins, completely covering them. After a longer time small collections of gas formed in the skin, chiefly of the fins, and sometimes made the fish so buoyant that they could scarcely keep below the surface. Death resulted after a longer or shorter time from gas embolism or the presence of free gas within the blood-vessels. Often the vessels of the gill filaments were filled with gas and the ventral aorta and bulbus of the heart were distended with it and quite empty of blood. This gas contained about 97 per cent. of nitrogen.

## HOW TO MAKE "HUMANISED" MILK.

*To the Editors of* THE LANCET.

SIRS,—In answer to your correspondent "B. (Medicus)" in THE LANCET of April 21st, p. 1150, as to the making of "humanised" milk the following directions for making artificial human milk are taken from Playfair's "Science and Practice of Midwifery": "Take half a pint of skimmed milk, heat it to about 96° F., and put into the warmed milk a piece of rennet about an inch square (or Clarke's essence of rennet may be used). Set the milk in the fender or over a lamp until it is quite warm. When it is set remove the rennet, break up the curd quite small with a knife and let it stand for ten minutes or a quarter of an hour, when the curd will sink. Now pour the whey into a saucepan and boil it up quickly. Measure one-third of a pint of this whey and dissolve in it, when hot, 110 grs. of milk sugar. When this one-third of a pint of whey is cold, add to it two-thirds of a pint of new milk, and two teaspoonfuls of cream, and stir. The food should be made fresh every 12 hours and warmed as required. The piece of rennet when taken out can be kept in an egg-cup, and used for ten days or a fortnight. It is advisable during the first month to use rather more than one-third of a pint of whey, as the milk is apt to be rather too rich for a newly-born child." I am, Sirs, yours faithfully,

JOHN E. H. PARSONS.

Shipton-under-Wychwood, Oxford, April 23rd, 1906.

## TWO OLD MEDICAL BOOKS.

A CORRESPONDENT writes: "I recently picked up in an old book shop the following two medical books: 1. 'Profodia Chirurgica,' published by C. Corbett at Addison's Head and Richard Chandler at the Flower-de Luce, both without Temple Bar. 1732. The author's name does not appear and there is a long dedication to a Mr. Shipton. 2. 'Anatomical Plates of the Arteries of the Human Body.' These are stated to be accurately coloured and reduced from the Icones of Haller with concise explanation. The book is published by E Cox, St. Thomas's-street. 1808." The writer adds that the plates in the second book are very fine and that both books are well bound in leather, and he inquires if any reader can tell him their value.

## THE THERAPEUTIC VALUE OF CHEWING GUM.

THE habit of chewing a resinous substance after meals as an aid to digestion is very prevalent in the United States of America and in Canada. The preparations in most demand are known under the names of "chewing gum," "pepine gum," and "pepine." The custom is not unknown among Eastern peoples; thus, in India betel nuts and areca nuts are mixed with lime and used in a similar manner. In a recent number of the *Bulletin des Sciences Pharmacologiques* Dr L. Meunier has given the results of an investigation into the physiological aspect of the chewing habit and has drawn attention to its value in therapeutics. As a result of masticating a piece of chewing gum containing a small proportion of alkali the flow of saliva is increased to five or six times the usual volume. Herein lies the therapeutic value of the habit in cases where the gastric juice is excessively acid and so hinders the digestion of starchy foods. The acid is partly neutralised by the saliva which is thereby enabled to convert the starch into soluble products. A number of patients were put on a diet of 60 grammes of bread and 250 cubic centimetres of water per meal for two consecutive days. A masticatory consisting of an aromatic resin was given after each meal on the second day only. The gastric liquid was analysed half an hour after each meal, when the amylolytic change was considered to be complete and the figures show that the masticatory had in all cases increased the quantity of soluble products produced from the starchy food. Allowing for the dilution of the gastric contents by the increased flow of saliva the figures obtained in ten cases showed a gain of from 30 to 40 per cent. in the soluble starch products due to the use of a masticatory substance. Dr. Meunier has obtained satisfactory clinical results in all cases of hyperacidity treated by him during a year, which tends to show that the American custom of chewing gum, though based on empiricism, may be supported on scientific grounds. Dr. Meunier does not state the exact kind of resin which he employed, but mastic is a suitable substance for the purpose. It is the resin obtained from *Pistacia lentiscus*, a small tree growing in Scio and in other islands of the Grecian Archipelago, where the resin has been produced from very early ages. It is mentioned in the works of Dioscorides and Pliny. It occurs in small rounded tears, pale yellow in colour, with an agreeable aromatic odour and taste. When chewed it readily forms a tenacious mass which does not stick to the teeth and so can be retained in the mouth for a considerable time.

## MEDICAL REFEREES TO INSURANCE COMPANIES.

*To the Editors of* THE LANCET.

SIRS,—May I through the medium of THE LANCET call attention to what I consider a pernicious practice on the part of some life assurance companies?—viz., in a small town with perhaps half a dozen medical practitioners one only holds the appointment of referee to a big insurance company. By this appointment he gets into touch with the other men's patients and the local agent spreads the fame and skill of "our doctor." This is touting, and touting of the worst sort. Perhaps those who have been victims to this system, like myself, will give their opinion on the question. In a small town—say, of 2000 or 3000 inhabitants—why not appoint all the medical men instead of one only? The latter plan would, I feel certain, tend to cause a better feeling among the profession and in the end would work well in the interest of the insurance companies. Thanking you in anticipation of your publishing this letter, I am, Sirs, yours faithfully,

April 24th, 1906. CYCNUS.

*C. B.*—We agree with our correspondent that there is no necessity for such advertisement, as the patients on the books of the practice have been privately notified of the intending dissolution. At any rate, one insertion in the local papers would suffice.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

# Medical Diary for the ensuing Week.

## OPERATIONS.

### METROPOLITAN HOSPITALS.

**MONDAY (30th).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (3 P.M.).

**TUESDAY (1st).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (2 P.M., Ophthalmic, 2.15 P.M.).

**WEDNESDAY (2nd).**—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9.30 A.M., Dental, 2 P.M.).

**THURSDAY (3rd).**—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (2.30 P.M.).

**FRIDAY (4th).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.) Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), St. Mark's (2.30 P.M.).

**SATURDAY (5th).**—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9.30 A.M.).

**At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.**

## SOCIETIES.

**TUESDAY (1st).**—PATHOLOGICAL SOCIETY OF LONDON (St. Bartholomew's Hospital).—5 P.M. Prof. Klein: (1) Bacillus Equi; (2) Conveyance of Plague by Feeding.—Mr. F. A. Rose: Carcino sarcoma of Larynx.—Dr. Andrewes and Dr. Horder: Classification of Pathogenic Streptococci.

**WEDNESDAY (2nd).**—OBSTETRICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8 P.M. Specimens will be shown by Dr. Lewers, Dr. McCann, Dr. Tate, and Dr. J. I. Parsons. Short Communication:—Dr. Lewers: Three Cases of Epithelioma of the Vulva with History subsequent to Operation. Paper:—Dr. Herman: A Case showing (1) Uterine Contraction without Retraction; (2) Prolonged High Temperature of Nervous Origin.

**THURSDAY (3rd).**—OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM (11, Chandos-street, Cavendish-square, W.).—3 P.M. Card Specimens will be shown by Mr. S. Stephenson, Mr. W. Roll, Mr. A. L. Whitehead, Mr. F. W. Edridge-Green, Mr. J. B. Lawford, Mr. L. V. Cargill, and Mr. M. S. Mayou. 3.30 P.M. Papers:—Mr. J. Taylor and Mr. T. Collins: Congenital Malformed Cystic Eye.—Mr. M. Davidson: Radium in the Treatment of Rodent Ulcer.—Mr. R. Pickard: Implantation Tumour of Iris.—Mr. Cargill and Mr. Mayou: Tuberculosis of Choroid.

NORTH-EAST LONDON CLINICAL SOCIETY (Tottenham Hospital, N.).—4 P.M. Discussion on Asthma (opened by Dr. E. F. Willoughby).

**FRIDAY (4th).**—WEST LONDON MEDICO-CHIRURGICAL SOCIETY (West London Hospital, Hammersmith, W.).—8.30 P.M. Discussion on Influenza, its Varieties and Sequelæ.

SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN (11, Chandos-street, Cavendish-square, W.).—5.30 P.M. Pathological Meeting. Specimens will be shown by Dr. E. C. Mackay, Dr. J. P. Parkinson, Dr. L. S. Dudgeon, Dr. E. Cautley, Dr. F. Langmead, Dr. G. Carpenter, Dr. J. G. Emanuel (Birmingham), Dr. E. Hobhouse (Brighton), Mr. G. Pernet, and others.

## LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

**MONDAY 30th.**—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—12.15 P.M. Mr. Baldwin: Practical Surgery. 2 P.M. Dr. Arthur: Skiagraphy. 2.15 P.M. Medical and Surgical Clinics. 4 P.M. Mr. Dunn: Ophthalmology.

CHARING CROSS HOSPITAL.—4 P.M. Dr. Galloway: Demonstration of Dermatological Cases. (Post-Graduate Course.)

**TUESDAY 1st.**—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. H. Campbell: Clinique. (Medical.) 5.15 P.M. Sir Lauder Brunton: A Demonstration of Apparatus for Measuring the Blood Pressure in Man.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—11.30 A.M. Dr. H. Wright: Bacteriology. 2.15 P.M. Medical and Surgical Clinics.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).—3.30 P.M. Clinical Lecture:—Dr. Batten: Ataxia in Childhood.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN (Leicester-square, W.C.).—5 P.M. Exhibition of Microscopic Specimens. Address:—Prof. G. S. Woodhead.

**WEDNESDAY (2nd).**—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies street, W.C.).—4 P.M. Mr. J. Cantlie: Clinique. (Surgical). 5.15 P.M. Lecture:—Dr. G. E. Herman: The Prevention of Difficult Labour.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M. Dr. H. Wright: Clinical Examination of Blood and Urine. 2.15 P.M. Medical and Surgical Clinics. 3 P.M. Mr. Bidwell: Intestinal Surgery.

UNIVERSITY COLLEGE HOSPITAL (Gower-street, W.C.).—4 P.M. Clinical Lecture:—Dr. F. T. Roberts: The Physical Examination of the Heart and Great Vessels.

**THURSDAY (3rd).**—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. Hutchinson: Clinique. (Surgical). 5.15 P.M. Lecture:—Mr. A. H. Tubby: Surgical Diseases of Children.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—11.30 A.M. Dr. H. Wright: Bacteriology. 12.15 P.M. Mr. Baldwin: Practical Surgery. 2 P.M. Dr. Arthur: Skiagraphy. 2.15 P.M. Medical and Surgical Clinics. 4 P.M. Mr. Dunn: Ophthalmology.

ROYAL INSTITUTION OF GREAT BRITAIN (Albemarle-street, W.).—5 P.M. Mr P. C. Mitchell: The Digestive Tract in Birds and Mammals. (Lecture II.)

CHARING CROSS HOSPITAL.—4 P.M. Dr. Murray: Demonstration of Medical Cases. (Post-Graduate Course.)

CENTRAL LONDON THROAT AND EAR HOSPITAL (Gray's Inn-road, W.C.).—8 P.M. Clinical Evening.

**FRIDAY (4th).**—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. H. Tilley: Clinique. (Throat).

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—11.30 A.M. Dr. H. Wright: Bacteriology. 2.15 P.M. Medical and Surgical Clinics. 3 P.M. Mr. Bidwell: Intestinal Surgery.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).—3.30 P.M. Clinical Lecture:—Dr. Batten: Infantile Hemiplegia.

## EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

*It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.*

*Lectures, original articles, and reports should be written on one side of the paper only,* AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

*Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.*

*We cannot prescribe or recommend practitioners.*

*Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."*

*Letters relating to the publication, sale and advertising departments of* THE LANCET *should be addressed "To the Manager."*

*We cannot undertake to return MSS. not used.*

## MANAGER'S NOTICES.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will insure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

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## METEOROLOGICAL READINGS.

*(Taken daily at 8.30 a.m. by Steward's Instruments.)*

THE LANCET Office, April 26th, 1906.

| Date. | Barometer reduced to Sea Level and 32° F. | Direction of Wind | Rainfall. | Solar Radiation in Vacuo | Maximum Temp. Shade | Min. Temp. | Wet Bulb | Dry Bulb | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| April 20 | 29·97 | S.W. | ... | 80 | 57 | 35 | 38 | 43 | Overcast |
| ,, 21 | 30·02 | W. | ... | 116 | 62 | 42 | 47 | 51 | Fine |
| ,, 22 | 29·99 | W. | 0·04 | 93 | 56 | 42 | 45 | 49 | Fine |
| ,, 23 | 30·09 | N.E. | 0·02 | 102 | 52 | 39 | 40 | 45 | Fine |
| ,, 24 | 29·99 | W. | 3·07 | 81 | 48 | 36 | 38 | 39 | Raining |
| ,, 25 | 29·83 | E. | 0·05 | 102 | 51 | 39 | 39 | 43 | Cloudy |
| ,, 26 | 29·63 | S.W. | ... | 83 | 49 | 36 | 37 | 40 | Overcast |

**During the week marked copies of the following newspapers have been received:**—*Standard, Bolton Chronicle, Manchester City News, Spalding Free Press, Andover Advertiser, Evening News (Portsmouth), Leamington Spa Courier, Herefordshire Mercury, Western Mail (Cardiff), Westminster Gazette, Dublin Weekly Times, Liverpool Post and Mercury, Surrey Advertiser, Literary Digest, (New York), Scientific American, Daily Chronicle, Irish Times, Morning Leader, Daily News,* &c.

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